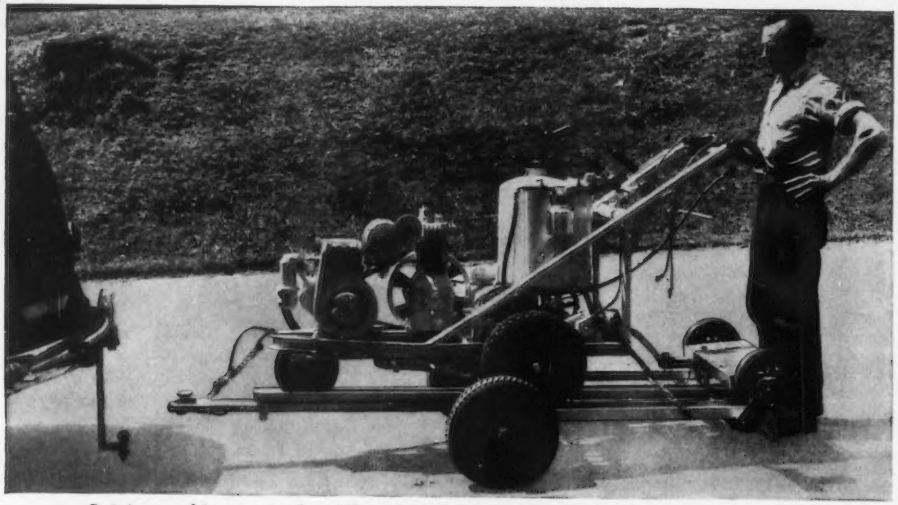
APRIL, 1951

Traffic Engineering

Official Publication of the Institute of Traffic Engineers

finger tip balance



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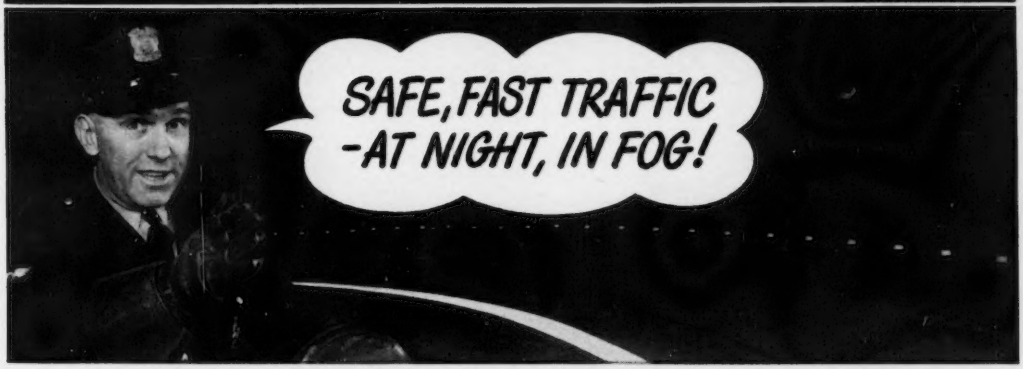

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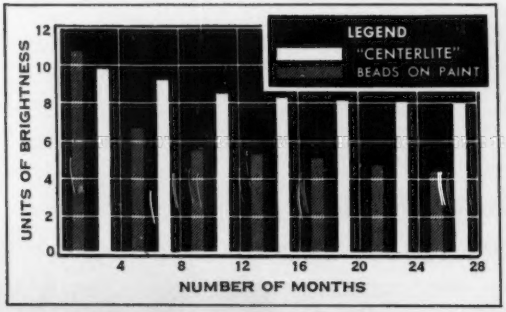

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Traffic Engineering

OFFICIAL PUBLICATION OF THE INSTITUTE OF TRAFFIC ENGINEERS

VOLUME XXI | APRIL, 1951 | NUMBER 7

COVER: One of the parking garages now under construction in Milwaukee. This garage will be located at Fourth and Marquette Streets and will accommodate 535 cars. See article by George A. Devlin.

Traffic Engineering is that phase of engineering which deals with the planning and geometric design of streets, highways, and abutting lands, and with traffic operation thereon, as their use is related to the safe, convenient, and economic transportation of persons and goods.

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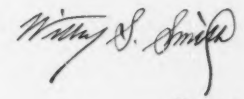
Frankly Speaking

A TASK competently and capably undertaken is not enough. To be recognized and useful, accomplishments must be brought to light. Aggression is dependent upon research and dissemination of knowledge. To stimulate these objectives, the *Institute* offers this year for the first time a "Past Presidents' Award for Merit in Traffic Engineering."

The idea is not new. Similar awards have been offered in other engineering societies and among technical groups for many years. They are intended to encourage the conduct and reporting of independent and original research; and, they provide means for recognizing outstanding accomplishments. In a sense, the *Institute* passes another important milestone in the establishment of this Award. It is the intent of the Officers and Past Presidents to make the Award a coveted honor within the profession. It would seem that young engineers, they are the only ones eligible, will overlook an unusual opportunity to attain recognition for distinguished achievement if they do not enter the competition.

It has been necessary to lay down rules: only Junior and Associate members under thirty-five years of age are eligible to compete; a written report must be submitted on personal endeavors and achievements; a Board of Judges will determine the recipient; and, the Award will be made at the next Annual Meeting of the *Institute*. While only one person entering the competition each year can be granted an Award, the achievements reported by others will also be recognized.

Accomplishment brings a sense of reward to the individual. More than that, to gain rewards the individual must make himself worthy. Any accomplishment deserving of the Past Presidents' Award will bring with it recognition by the profession.



Director

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The SPHERE of SAFETY

Private Enterprise Takes Hold of the Parking Problem

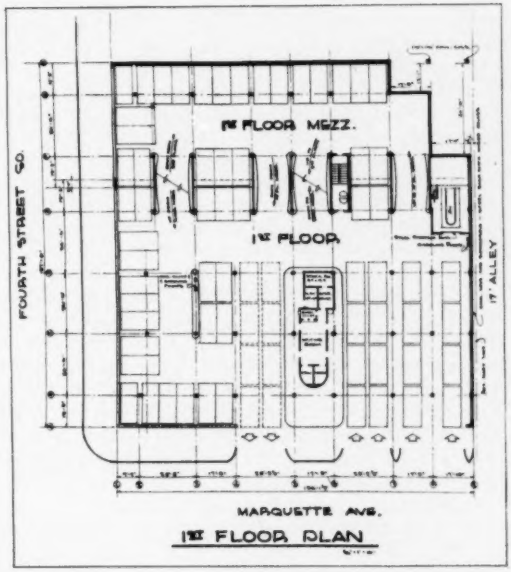
By George A. Devlin
Vice-President, National Garages, Inc., Detroit, Michigan

ON December 4, 1950 the newspapers in Minneapolis carried the story of the ground-breaking ceremonies for the first of two large downtown parking structures being built by a group of Minneapolis businessmen. This brought to a successful conclusion the first and most difficult chapter in the Minneapolis parking story.

The story began in 1947 when the downtown businessmen, following the example of many other cities, sponsored the passage of enabling legislation known as the "Elwell Act" in the Minnesota State Legislature. This Act gave the City of Minneapolis the right to sell revenue bonds, condemn land, erect parking structures, and to operate these facilities when completed. There was one unusual provision of this Act which stated in effect that at least 50% of the cost of any parking development created under the Act must be met by a direct assessment against the benefited district. The Act went on to define the benefited district as being not more than 1,000 feet from any parking development created thereunder.

A number of parking studies to determine the amount of additional off-street parking needed in Minneapolis had developed figures as high as 10,000 as the immediate requirement. On the basis of motor vehicle growth in the County, this figure, projected only ten years into the future, would have to be increased to 15,000. The development of a program of this magnitude appeared to have many problems associated with it, both in finding sufficient and conveniently located, low income producing land as well as the possible effect of this amount of additional parking capacity on the already highly congested streets in the central business district. At this point the City employed National Garages, Inc., parking operators and planning consultants, to assist it in formulating an immediate program.

In order to more easily absorb the shock of the increased traffic which would be generated by new parking facilities, it was decided, as the first step in the long range parking development plan, that the goal would be limited to approximately 2,000 car spaces, distributed among three or four strategic locations. It was further agreed that the most immediate need was for additional off-street parking space to serve the shopping parker and others who require parking for an average of two hours. Although not unaware of the needs of the all-day parkers, the City Planning members felt that the selection of the shopping parker as the first group to be taken care of was a wise one, since the level of activity in the central business district was directly dependent on the number of customers coming into town every day. If the stores and office building tenants moved out to the suburbs in order to obtain more customers and clients, it was obvious that the need for all-day parking space in the downtown area would disappear. In order to limit the extent of possible legal action against the City for entering the domain of private enterprise, it was also decided not to include the sale of any services or supplies in the contemplated municipal parking structures and also that no first floor space in such buildings would be rented for retail sales use.



1st FLOOR PLAN

After careful study and weighing of many conflicting factors, three centrally located sites were selected and preliminary layouts and financial estimates developed. The figures showed that these three sites would have a capacity of 1825 cars and the over-all cost for land and buildings would be $4,433,000 or approximately $2,400 per car space. The operating revenue and expense estimates indicated a net operating income before interest and amortization of $250,000 per year. In accordance with the provisions of the Elwell Act preliminary computations of the assessment against the benefited business establishments were also made. In the case of one large store this schedule showed that the assessment would be in excess of $200,000.

At this point the City called in the businessmen and laid before them the program which had been developed. Before approving this plan which would require that a non-tax deductible expense of better than $2,000,000 would

be assessed against their various businesses, these men under the leadership of the Chamber of Commerce and The Minneapolis Association of Building Owners and Managers decided to investigate the possibility of undertaking a similar parking program as a cooperative private venture sponsored by themselves. The same parking consultants were retained to revise the cost estimates in conformity with the expected cost of site acquisition through negotiated purchase rather than condemnation. The operating income estimates were also revised to reflect the added revenue to be anticipated from the sale of services and supplies, and possible rental obtainable from first floor retail space. As an offset against the higher revenue to be expected under a private financing plan there would be the expense of normal real estate taxes and provision for somewhat higher interest rates. The resulting figures however showed that the private financing plan was economically sound.

The report on the merchants' cooperative plan was completed in March 1950, and shortly thereafter a joint meeting of the City officials and the downtown businessmen was called. Two days prior to this meeting a third proposal was injected into the picture by one of the large financial houses, which offered to underwrite 100% financing of the municipal parking program, thus eliminating the 50% benefited district assessment. This plan however required that all revenues from the existing parking meters in Minneapolis be added to the contemplated revenues from the parking facilities to meet the carrying charges on the bonds; and, further, that until the bonds were retired, the City would not be permitted to reduce by more than 20% the present number of parking meters. There were for consideration at the meeting therefore three possible plans of procedure which may be summarized as follows:

1. Municipal development under the Elwell Act with 50% of the cost being derived from a benefited district assessment with the balance financed by municipal revenue bonds.
2. Municipal development with revenue bonds supported by the combined revenues from the proposed parking facilities and existing parking meters.
3. Private financing through the sale of first mortgage bonds for about 75% of the total cost with the balance of the funds obtained through the sale of common stock.

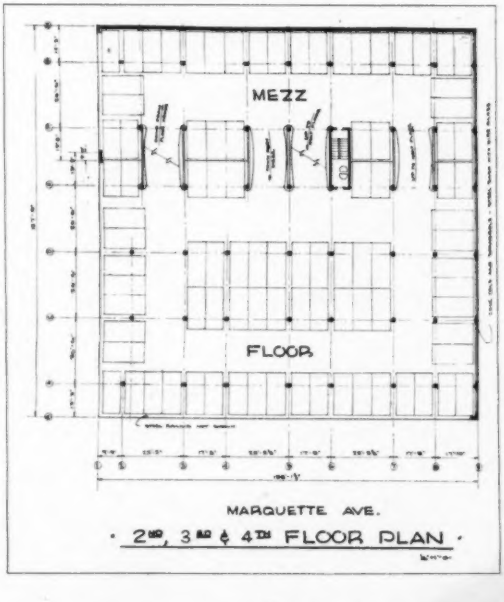
At the joint meeting of the City officials and businessmen these three plans, with the favorable and unfavorable aspects of each, were carefully explained. After some general discussion it was suggested that the final decision be put off for a week to give everyone an opportunity to consider the proposals. At this point one of the businessmen said that he felt that everyone present had been thinking about various ways of solving the parking problem in Minneapolis for a number of years, and that they were therefore as ready as they ever would be to make a definite decision. He requested a show of hands of those in favor of each plan. There were no hands raised in favor of the first or second plan. When the call was made for those in favor of the third plan, everyone put up his hand. The chairman then pointed out that, by their indication of approval of the third plan, the businessmen were in effect underwriting approximately $1,000,000 of capital stock, and asked for a reshowing of hands on the third proposal. Again everyone raised his hand.

A small organizing committee was selected which proceeded immediately to form a corporation which was named Downtown Auto Park, Inc. The Corporation then entered into negotiations for the acquisition of the recommended parking sites. Unfortunately, one of the sites had recently been sold and construction started thereon for a group of small shops and no alternate site could be obtained at the time, so it was decided to proceed on the basis of only two structures on the sites already obtained. The corporation proceeded to employ the firms of Larson and McLaren, Minneapolis architects, D. L. Briegel & Associates, Detroit engineers, and National Garages, Inc., to develop the plans and specifications for the contemplated parking structures.

These plans show two open-sided parking structures having very simple but attractive exterior architectural treatment. One building will have a capacity of 535 cars (see cover) and the other 819 cars, and both have basements. They are both of the staggered floor, double-ramp type with the parking arrangement and other operating features designed for attendant parking and the most rapid handling of cars in order to assure high turnover. Air-entraining concrete is being used to minimize water absorption and both structures are equipped with manlifts to transport the attendants between floors. The cost of the structures is approximately $1,000 per car space and the over-all cost for both land and buildings is approximately $2,000,000. The foundations have already been poured for the first of the two structures and work was started on the second structure on February 1.

There were of course many problems to be solved and details to be worked to bring these two structures to the building stage, and the Directors and Officers of Downtown Auto Park have given generously of their time although serving without compensation.

It is contemplated that these two parking decks will be only pilot units and additional developments will be undertaken as the need for them is demonstrated and sites can be acquired. It is also interesting to note that as a result of the program undertaken by Downtown Auto Park, several individuals have already announced plans to build two more privately financed parking structures in Minneapolis.



Businessmen's Conference on Urban Problems - Chamber of Commerce of United States, Washington, D. C.

Urban Traffic Improvement

The Atlanta Traffic Improvement Program

Statement By Robert R. Snodgrass
President, Atlas Auto Finance Company, Atlanta, Georgia
Vice-President, Atlanta Chamber of Commerce

Through the courtesy of the Chamber of Commerce of the United States, "Traffic Engineering" magazine is reporting two panel discussions of interest to subscribers. This is the second discussion in a series inaugurated with the January issue of the magazine. A transcript of the entire conference will be published and is available at nominal cost.

TRAFFIC-WISE, Atlanta is probably best known as the death place of Margaret Mitchell, beloved author of "Gone With the Wind." Her tragic death as a pedestrian, on the Peachtree Street she made famous in her book, focused national attention on our one weak spot in the traffic picture—lax enforcement.

I assure you that this condition is fast being corrected. This year our traffic fatality toll is less than half what it was last year. We even set an all-time record of 90 days without a single fatality.

But, actually, the death of Margaret Mitchell was not what sparked the progressive traffic improvement program in Atlanta. We had long been aware of the need; and had taken definite, forward steps before this tragedy bared our traffic weaknesses to the world.

Two years before Margaret Mitchell's death, the Greater Atlanta Traffic Improvement Association was established. Its legislative committee rewrote the traffic code to conform to the Model Traffic Ordinance. Atlanta adopted it, and the Traffic Improvement Association secured the agreement of more than 20 municipalities in the metropolitan area to revise their traffic ordinances to conform.

A city traffic engineer's department was established and well-staffed. A traffic commission in the city government was formed to take politics out of traffic. An off-street parking survey was completed and a recommendation made that Atlanta needed 3,000 new off-street parking spaces in the business district. Private enterprise came up with 3,272 within a year. A $40-million expressway system was launched. A $5-million mercury vapor lighting system—for the business district and 38 miles of arterial streets—was started. It is scheduled for completion in 1952.

All this happened before the death of Margaret Mitchell. Much more was planned. The immediate result of her death was an improved taxi ordinance and, of more far-reaching importance, public cognizance of Atlanta's traffic problems and a desire to secure improvement.

Those things are essential, as you know. They hastened the switch from an *elected* judge to a traffic judge *appointed* to his bench, and thus divorced vote-getting from the court. This desire by Atlanta leaders culminated in the formation of the Greater Atlanta Safety Council (a Chapter of the National Safety Council), which is doing an excellent job in feeding safety education to the public.

Atlanta is working out a half-million-dollar signalization program. It now has a continuing program of street improvement including resurfacing, widening, signing, painting, and grade separations. It invited a survey of its police department by the International Association of Chiefs of Police and Northwestern University Traffic Institute, whose recommendations will help us to further improve traffic handling and utilize our policing force.

Atlanta has taken the leadership in promoting uniform state traffic legislation, and early this year helped successfully promote the first Governor's conference on highway safety in Georgia.

With the strides made in the last few years, we can now say that every traffic improvement *is* an improvement, made only after careful and exhaustive analysis of the situation. Unfortunately, that hasn't been true in the past. If it had been, we wouldn't have the dilemma which faces us today. But I am sure we will, in reasonable time, meet our traffic problems. We have top leadership and public support behind a sound, comprehensive program. Atlanta could well be the answer on how best to approach our complex modern traffic problem.

The Norfolk Traffic Improvement Program

Statement By W. F. Duckworth
Mayor, City of Norfolk, Virginia

THE economic existence of a City is completely dependent upon the ability of its transportation facilities to move people and commodities to and from their destination. The arteries upon which vehicular traffic circulates carry the life's blood of the community. If traffic congestion reaches the stagnation point business and industry of the community must suffer economic loss. The loss of business will eventually produce an unstable tax structure with a consequent reduction of revenue to the City Government. Basically traffic problems of any community are similar, but each has its own pecularities and must be dealt with individually.

The topography, which is so important to Norfolk as a world port, has also produced unique traffic problems of a complex nature. The rivers which cut deeply into the City from all sides have influenced the layout of the street system and have channelized all traffic into the Central Business District on about five major arteries. Since the Central Business District is located in the oldest part of the City, its streets, designed for horse and buggy travel many centuries ago, are narrow, crooked, and without pattern. The loads which these streets are asked to carry each day are far in excess of their intended capacities.

In 1948, the City Government, realizing that congestion was stifling business, created a five-man Commission to deal with the traffic problems of the downtown area. The Commission was composed of three businessmen, a lawyer, and a realtor with the Traffic Engineer acting as Secretary to the Commission. As a business man I was a member of that Commission.

For eight months we conducted traffic surveys of all types and studied movements of people and vehicles in an effort to determine the most satisfactory method of solving the problem. Since it was not within our province to recommend a vast expressway program our chief aim was to prepare a satisfactory plan employing existing facilities to the best advantage. Accordingly, we worked out a traffic plan calling for the extensive use of one-way streets, re-routing of the major bus lines, parking and truck delivery prohibitions during peak hours, and several innovations which are worthy of special attention. Our studies showed that in order to produce the most efficient traffic movement on one of our main business arteries, 40 feet in width and carrying 15,000 vehicles per day, full advantage of all moving lanes had to be utilized at all times. To accomplish this we proposed an unbalanced movement of traffic, controlled by portable signs to accommodate peak flows. During the morning rush period three lanes would move inbound and one lane outbound from the Central Business District. A balanced flow of two lanes in each direction would be maintained during the normal portion of the day, and during the afternoon rush three lanes would move outbound from the Central Business District with one lane for inbound traffic. Similarly on an extremely narrow, but important artery, it was decided to institute one-way inbound movement in the morning and one-way outbound movement during the remainder of the day.

After the plan had been drawn up to our satisfaction the job of selling it to the public and business interests in the downtown area was of paramount importance. The plan was so well explained through newspaper articles, radio and public addresses that when a public hearing was held only scattered opposition was revealed. Councilmanic approval was next obtained and after a month of intensified publicity, the traffic plan was put into effect.

From the first, public acceptance and use were most gratifying. Since the unbalanced flow and reversible one-way street principles were new to the driving public of Norfolk, we were slightly skeptical of their acceptance. But our fears were ungrounded. During the morning peak half-hour over 500 vehicles used the unbalanced lane movement and the reversible one-way street at an average speed of 16 miles per hour with traffic lights set for 22 miles per hour. During the afternoon one of our major one-way arteries carried 700 vehicles during the peak half-hour and 1,200 vehicles during the peak hour.

The volume of traffic using the streets has increased steadily since the inception of the plan and surveys throughout the downtown area have shown that even with increased volumes, overall speeds have been increased by 3 to 10 miles per hour with no rise in the accident rate.

Initially and as expected, we received complaints from some of the merchants located on the one-way streets that they were losing business due to the difficulty in reaching their establishments from certain directions. But, as the public became accustomed to the new routes the downtown situation was so much improved that no more complaints were received. Now, even with our traffic volumes increasing at the rate of 6 to 8 per cent per year, the new downtown traffic plan is still paying dividends.

The foresight of the City in creating the Traffic Commission, composed of business and professional men, working with trained traffic advisors, can be upheld as a model for similar community action throughout the country.

The success of this venture, I believe, can be attributed completely to the harmony which existed between the technical advisors who prepared the plan; members of the Commission representing the business interests who knew what was needed to revitalize the downtown area; and the press and radio who publicized our program for free traffic movement.

There are three elements which are essential to the success of any traffic program; first, the assurance that the traffic plan is basically sound; second, that the plan has the support of professional and business interests throughout the affected areas; and third, that the driving public is completely familiar with its details.

Concerted community action, as in Norfolk, can relieve our traffic jams and produce the free traffic movement which is so vitally essential to the continued growth of our City's business and industry.

What a Strong, Efficient Local Transit System Means to Local Business

Statement By Donald Walker
President, Fort Wayne, Indiana, Transit Company

THERE is something fascinating to the average citizen in those wonderful and beautiful pictures of our "City of Tomorrow"—with widely spaced, towering buildings—connecting skyways on many levels—glistening streamlined vehicles gliding over glass-smooth surfaces—and hardly any people anywhere! We have gazed entranced at such sketches for many long years, but nowhere on this troubled globe is there anything remotely approaching the conception that the artists have shown us. True, in the largest metropolitan areas there are a few expressways, but local businessmen are still inviting customers to their locations in the same central business districts of their own cities.

Instead of our dream cities with free flowing movement, we have astounding traffic tie-ups in even our smaller cities, intolerable delays in the middle sized communities, and such congealing congestion of the milling masses in our major business capitals that merchandising establishments by the dozens are moving out into the suburbs.

We are meeting today in Washington where untold billions of expenditures are not considered beyond the capacity of our citizens, but even these sums for saving the world and protecting our country would be dwarfed by the amounts necessary to rebuild our cities to match the artists' dreams.

In almost all of our cities we still have the same streets devoted to business enterprises that we had 25 years ago, when the number of vehicles on the streets had already begun to create our present problems. *Of greater importance*—in almost every instance we will probably have the same streets 25 years from now. The local merchant will still have the problem of getting people and goods into and out of his store in the congested area.

Some facts on use of street space have been repeated so often I am sure you have all heard them. One bus with an average load of passengers contains more people than are contained in *all* of the crawling cars in a sizeable city block. One individual carried over the streets in a private car requires seven times as much room as the same person carried in a transit vehicle.

So what? We can't *make* people ride on the transit vehicles. We of the transit industry can, however, help in a major way to alleviate your problem if we can attract people to the use of our vehicles. Some ask—will anything do that? Certainly not reasons of economy in this period of easy money, when the average motorist thinks nothing of paying from two or three to a dozen times as much to drive to the business district and park, as he would pay to get there by trolley coach, bus or street car. Only convenience and comfort may have some appeal to those who finally realize how much of their own time is now wasted.

If the transit company in your home community is to help effectively in solving your traffic problem, it must be efficient and strong—able to keep on the streets modern equipment with the ability to keep up with other traffic, and offer at least some attractions to the possible riders. You, as businessmen and city officals, must lend a helping hand instead of a *kick in the pants* when your transit company needs adequate fares, relief from unjust and restrictive taxation, and assistance in moving its own vehicles through the congested districts.

Do not overlook the competitive nature of the mass transportation business now. There is no utility monopoly in transit. And do not let a cheap fare, inadequate for any good service, become a sacred cow of political tradition in your city. If you, as supposed advocates of private enterprise, simply say, "Oh well, let the city take it over and pay the losses," this ostrich-like approach will not solve your problem either, and the net cost may be even greater to you as a taxpayer.

Transit cannot do the entire job of carrying people to the business district in even the very largest metropolitan centers, but your business district, in even the smaller cities, would be lost without transit service. A strong, efficient local transit system *can* help you solve your problems.

(Businessmen's Conference, continued on page 228)

U. S. Congress Approves Grant for Inter-American Highway

The United States Congress has approved a (U.S.) $4,000,000 appropriation for continuing aid for construction of the Inter-American Highway. The grant, authorized by the Federal Aid Highway Act of 1950, is for the fiscal year 1951. This legislation also authorizes the same amount of money for the fiscal year 1952 (See World Highway Report Vol. I, No. 18), to be acted on by the Congress later this year.

National Registration of Motor Vehicles Proposed

Federal registration of motor vehicles is proposed in a bill introduced by Representative A. S. Camp (D., Georgia) a member of the House Ways and Means Committee. He proposes a rate of 20 cents per hundredweight on passenger cars and private trucks and 80 cents per hundredweight on for-hire vehicles if the gross weight is not more than 58,000 pounds. Vehicles with a gross weight in excess of 58,000 pounds would pay an additional fee of 5 cents per mile. The proceeds would be divided between Federal and state governments.

Promoting a Statewide Urban Arterial Improvement Program

Statement By B. D. Tallamy

Superintendent of Public Works, State of New York

A SHORT while ago I received in the mail a most interesting booklet called "Get Out of the Traffic Muddle." I read this brochure carefully and liked the concise way in which its story was presented. Get Together—Get the Facts—Get a Program—Get Organized—Get Action. These section headings suggested a good method of presenting here today our approach to the solution of the overall rural and urban highway traffic problems in New York State. However I shall add one more title—Get a Sound Financial Program.

The foreword of this guide book begins with the provocative question—"Is the traffic problem exacting a big toll in your city?" It would be needless waste of time to tell you that there are serious traffic problems in most urban areas. Your civic interest in attending these sessions is evidence enough that you recognize growing traffic congestion as a serious threat to the stability of many an established urban enterprise. You all are aware of the importance of adequate transportation to the well being of your communities. Such being the case, we can start with the premise that a serious traffic problem does exist; and this can be solved only by the coordinated efforts of public and private interests.

Get Together!

We believe that we are doing just that in New York State. In 1944 and 1945, upon recommendation of Governor Dewey, the Legislature enacted amendments to the State Law which permitted the State Department of Public Works to construct arterial routes in cities. Incidentally, there are 62 cities in our State They range in size from New York, with its 7,800,000 people, to Sherrill, with only a few thousand.

The new amendments not only provide that the State would plan and build essential arterial routes, but that it would finance the bulk of the costs. This far-reaching program initiated the "getting together" of the State and municipal governments in the important field of transportation, adding another item to the overall program of State aid to municipalities. This cooperative venture included many features which are beneficial to the local communities. One of the most important is the availability of the State's trained force of engineers and technicians to expedite the urban program and to hasten the much needed relief to local traffic situations.

Get the Facts!

A special unit was set up within the department to "get the facts." Between 1946 and 1948, sixty urban areas were surveyed and statistics were compiled on the movements of millions of motor vehicles of all types. Just to give you an idea of the size of the problem, the survey covered such necessary information as an analysis of daily and rush-hour travel volumes, facts on origin and destination and the cause and extent of congestion. Local records of land use and development were studied. Surveys and area maps gave the essential information on local topography and physical barriers. This mass of information was assembled into a searching diagnosis of each community's traffic problems. In cooperation with local interests, we obtained all of the facts necessary to begin curing the ailments.

Get a Program!

Having the picture before us, the next step in each community was to "get a program." However in setting up these local programs it was necessary to consider Statewide needs as well. This was no small job for there are nearly 15,000 miles of State highways outside the city areas. An extensive Highway Needs Study, during which every mile of state road was inspected and scored on the basis of existing deficiencies, was completed in 1949. The analysis of these data and the forecasting of state highway requirements to meet the traffic demands of 1965 have been correlated into a long range, state-wide highway program.

The backbone of this comprehensive system is the New York State Thruway, sections of which are currently under construction in many parts of the State. This 535-mile superhighway will extend from New York City to Albany, thence across the state to Buffalo and southwest to the Pennsylvania line. It will be four to six lanes wide with opposing traffic separated by a wide mall. No grades will be over 3 per cent; curves can be negotiated at 70 miles an hour; and there will be no cross traffic or traffic signals for its entire length. We believe these features and others I have not mentioned will make the Thruway the world's finest highway.

Other major sections of the newly established State system are labeled: interregional and interstate, intercity, primary and secondary feeder. This huge rural State highway network is integrated with the city arterial systems to make possible rapid and safer travel from the heart of every city to that of every other city and to every section of the State.

While the rural portion of the system is more extensive, the urban routes are more complicated and costly. After arterial route needs are determined from traffic data, careful investigation of specific route locations is essential. All possibilities are analyzed to determine the effect on current and potential land use and relative costs.

When a master plan of arterial routes is completed for a city, State and city officials confer on the proposals. The plan is presented in detail at an open meeting with representatives of industrial, commercial and other interests. Public officials and others are requested to study recommendations and offer suggestions. Mutual agreement on a master plan for arterial route development is then worked out.

Get Public Support!

This is selling the program. The press, radio and television have aided materially by informing the public of the nature and extent of the proposals. Wide distribution of printed reports have proved to be a great asset in crystallizing public opinion. True, there have been objectors, but in many instances their underlying motives have been more of

a personal matter than interest in community welfare. Generally, at public meetings where objections are voiced, sometimes quite vociferously, the points in question are successfully cleared. These procedures have required much time and effort on the part of Department personnel but the end results have been gratifying. This procedure has brought the State government much closer to the people in every community where the program has been presented.

Get Trained Personnel!

Most of the success to date has been due to the great interest, effort and loyalty shown by the personnel assigned to this work. The urban program was new to a Department which formerly had been concerned only with the design, construction and maintenance of a rural highway system. However, by establishing a nucleus of experienced traffic and planning engineers, we were able to train a sufficient number of our highway engineers to cope with the problem ahead of us. We now have the main office highway planning unit spearheading our State-wide program, with similar units in each of our ten district offices. These branch offices maintain close liaison with the cities in their respective jurisdictions. This relationship, which has proven most satisfactory, covers the planning, design and construction of all work in the cities and urban areas.

Getting Action!

As to "getting action," let's look at the record. In the space of four years, since right after V-J day—the New York State Department of Public Works has completed traffic and planning surveys in sixty cities. Twenty-seven arterial reports and master plans have been presented to as many cities and twenty have been approved locally. Projects totaling well over $23 million are underway, completed or authorized in fourteen upstate cities and over $81 million worth are under way in New York City. It is expected that the balance of the city urban reports and master plans will be practically completed during 1951, and the arterial route construction which is proposed will consistute about 25 per cent of the annual highway program contemplated for the next 15 years. In addition, the State-wide rural highway needs study has been completed, and the requirements of the next 20 years have been established. The Thruway, the most important single element of the system, is well underway and will be entirely under contract within the next 4 years. We believe that New York State has promoted "getting together," "getting the facts" and so on to the point of "getting action." But these accomplishments could not have been realized without a sound financial program.

Financial Program

The story of the financial program under which we are operating began with the war years. During that period revenues that were ordinarily allotted to capital construction could not be spent because of wartime controls over the use of critical materials. Upon recommendation of Governor Dewey, a postwar capital construction fund was established which, by the end of the war, had reached a total of $678 million. These funds were for all forms of State public works, $257 million being allocated to highways and parkways.

However with the expenditure of the capital reserve funds set up during the war years, a serious financial problem for subsequent highway construction began to develop. The neglect of highways during depression years and the inability to construct during the war caused a multitude of defects all over the State highway system. In the cities the physical problem was equally serious and the financial problem of reconstruction far beyond municipal budgets. Added to the problem of financing longer range rehabilitation programs and the urban arterial systems was the urgency of undertaking and completing the Thruway within a much shorter period. This project in itself is estimated to cost $450 million and would have consumed most of the regular annual highway appropriations for a number of years to the detriment of progress on other essential work unless some new method of financing was developed.

In order to construct the Thruway, rural highways, parkways and urban arterial routes simultaneously, a plan for building the Thruway as a self-liquidating venture was conceived. The three-member Thruway Authority, created by the State Legislature at its last session, is now duly constituted. It proposes to finance the complete construction of the Thruway by the issuance of Authority bonds, backed by State credit if the electorate and legislature so approve, and to amortize these bonds through revenues from the issuance of special license plates to Thruway users. Preliminary investigation indicates that this method of financing is entirely feasible. The Thruway traverses the central transportation area of the State and the most densely populated sections. In a band 20 miles wide along its route are 85 per cent of the people and 79 per cent of the motor vehicles in the State.

The potential service which can be rendered to these and other citizens of the state as well as to out of state travelers is enormous. Transportation costs will be sharply reduced, travel between cities will be expedited, farm-to-market trips will be quicker and cheaper, industry and commerce will get an economic boost.

In addition, the Thruway will make it easier to reconstruct and maintain the balance of the highway system, both rural and urban. Paralleling routes will be relieved of overloads which in turn will reduce the need for otherwise expensive widening and reconstruction. Urban areas will be relieved of much of the heavy traffic now taxing city streets beyond reasonable limits. All of these features, plus many others, we believe will serve to make the New York State highway system the best in the world.

Because these state plans are well organized and there is reasonable promise of their consummation as the program develops, local public and private enterprise can undertake their planning with a greater degree of assurance that their developments will conform to established overall highway plans. This guarantee, together with the other direct benefits of better motor vehicle travel, fewer accidents and delays, will mean much to New York State's business.

The overall program, indicative of a progressive and realistic approach to the highway problems of today and the immediate future, can be carried on in any state through cooperative community and state action. Counterparts are in effect in other states. I commend them to you.

(To be continued in May issue)

MEMBERSHIP INFORMATION

may be obtained by writing to:

Executive Secretary
Institute of Traffic Engineers
Strathcona Hall
New Haven 11, Connecticut

The Traffic Engineer and the Police

By Lt. R. V. Keleher

Director, Police Training School, Chicago Park District Police

WE in the Police Department now have the utmost respect for the traffic engineer and his work. But, unfortunately, that was not always the case. I am not so young that I cannot recall the *Advent* of the Traffic Engineer in the Park District. Prior to 1934, we had 22 different park districts, most of them little individual boards, each having its own ambitions and plans and each jealously guarding its autonomy. Most of these Park Districts had their own police departments. With the Consolidation Act of 1934, the Chicago Park District came into being and then *began* the job of bringing all these separate families into one household. This was especially difficult with the Police because of the many sets of laws, rules and regulations, and procedures—with many contradictions. To add to this difficulty *with one another,* the office of the traffic engineer was created. Almost immediately he made his presence felt in the police department. He said our accident reports were worthless. We had always thought it sufficient to say in three or four lines that the automobile of John Smith had struck that of Joe Doe and that Joe was taken to St. Luke's Hospital and that both vehicles were towed away. Now it was proposed that we fill out *four* pages of information on every accident, even though it involved property damage only. And besides, get answers to such silly questions as "How far away were you when danger was first noticed and how fast were you travelling? How long have you been driving a car?"

Yes indeed, in our opinion this Traffic Engineer was certainly trying to create a job for himself—at the expense of the Police Department. Here was another example of friction. Police had always regulated and controlled the traffic lights on Michigan Avenue. Hadn't they talked the Yellow Cab Company into installing the yellow traffic towers along Michigan Avenue so that officers in those towers could see Michigan Avenue both north and south and by pressing certain buttons, could regulate a traffic signal at any particular intersection of the system? One day an order came out to the effect that the Traffic Engineer would be solely responsible for the changing and timing of the signals. It was hard for the Police to realize that this operation now required the services of an Engineer. We began to hear new terms—two phase—three phase—synchronization—channelization—lane capacity—cycle—progression—and we resented this intrusion of the Engineer.

As a further example, the Traffic Engineer came up with a Traffic Safety Contest in which the police wrote compositions on suggested improvements in the Park Traffic System, also a "What's Wrong Here" photo contest in which the police were shown a photograph of an intersection and told to list the items needing corrections. Some of our old timers in the Police Department still claim that the ideas and suggestions furnished the Traffic Engineer in these contests kept him working at top speed for the next five years.

But we have come a long way from those days. Now the Chicago Park District Division of Police represents a Police Department the size of that of Cincinnati, Ohio. In fact, we are the 17th largest Police Department in the country. We have almost 800 men and operate almost 100 Police Cars, each equipped with a two-way radio, and 43 motorcycles. We even have a Navy with two Police Boats, and have our own radio station independent of the City Police.

One of the most important factors contributing to better relations between the Traffic Engineer and the Police was the Police Training School. It was created in 1936 for all police, both the old timers as well as rookies, and it is one school from which our men never graduate. Attendance is compulsory for all ranks below that of Captain. School sessions run from 9:00 A.M. to 5:00 P.M. and constitute a tour of duty. We try to have every officer in for a training period at least once every other month. We knock off for the summer months, but each officer averages from 30 to 40 hours of in-service training per year. In addition to all this, we run many special schools. Each rookie attends a six-week induction school, then there are special schools for newly appointed sergeants, drunkometer technicians, school crossing guards, etc.

It was in the Training School that our Police first began to realize the magnitude of the traffic problem and the function of the Traffic Engineer. The Traffic Engineer was invited to address the Officers in the Police School. That was a session! But out of that session and many succeeding meetings grew a feeling of understanding and an appreciation for one another's work. We soon realized that the problem was big enough for both the Police and the Traffic Engineer.

In 14 years of operation of the Police Training School, we have risen above the stock subjects of criminal law and evidence, first aid, police procedures, and firearms training, and have taken on such special studies as cause and treatment of juvenile delinquency—the relationship between Police and minority groups and so on. But we have always managed to periodically work in a session on traffic and re-emphasize the relationship between the Police and the Traffic Engineer.

You may be interested to know that *14* police officers have attended the Northwestern University Traffic Institute. Three of them have had the five-month course and two more are in attendance at the Institute at the present time. We have assigned these graduates to each police district and have given them the title of Selective Enforcement Officers. Their job is to enrich the work of the district men and to make special studies and surveys of traffic conditions in their own district. Because of their background and training, they are able to evaluate the material coming in from the officers in the field and forward to the Traffic Engineer only those items of merit—thus saving the Traffic Engineer from taking time with unnecessary suggestions.

Now I would like to elaborate a little on the joint operations of the Police and the Traffic Engineer and his staff. Here are some examples of the splendid cooperation between the Police Department and the Traffic Engineering Section

and the unity of purpose displayed by both in their service to the people of *Chicagoland*.

We have designed a report called "A Report of Conditions Affecting Other Departments." It is used by the Police to report dangerous or unsatisfactory conditions in the Park system to the authority charged with the responsibility of maintaining that item. The possible uses of the report have been anticipated and the officer needs only to check off the nature of the thing he is reporting and write in its location. The desk sergeant sees to it that the proper department gets the report. Thus, the Traffic Engineering Section has the use of 800 pairs of eyes and ears on the street, working around the clock to inform it of such things as a sticking traffic signal, a stop sign down, a loose manhole cover, or a hazardous condition in the street. Likewise, other departments of the Park District benefit from the activities and observations of the members of the Police Department. To handle emergencies on the Boulevards and Drives better, which may require re-routing, barricades, flares, or lanterns at the scene of an accident or a disaster, the Traffic Engineer has created an emergency traffic patrol. This consists of three half-ton pick-up trucks manned by experienced workers and carrying all sorts of portable barricades and emergency equipment. These vehicles are furnished with a radio receiver, tuned to the Park Police Station, and are subject to instant call at any time of the day or night by the Traffic Engineer or the Police. Put yourself in the place of a police officer assigned to handle a bad accident at night. Perhaps the cars are in the middle of the roadway—one may even be overturned. The officer's first duty is to give first aid to the injured, then protect his property and see to it that traffic is set moving as quickly as possible. It is a welcome sight to see the Emergency Traffic Patrol truck arrive at the scene and see the driver step right in and give you assistance. It may be a slippery bridge requiring sand and salt. It's nice to pick up the radio telephone and call for the traffic patrol, then see the truck answer your request within a very few minutes. A broken store window or a dangerous cornice on Michigan Avenue building may require the roping off of an area. This is all in the day's work for the traffic patrol.

Another valuable service furnished us has been the numerous surveys and traffic counts conducted by the Traffic Engineer and his staff and the breakdown and analysis of accident report information. It is sometimes very difficult for the Chief or a Captain of Police to refuse the request of an influential individual or group that a Police Officer be assigned to a certain crossing. By referring to the Traffic Engineer's traffic count, the officer is often able to show the *influential* individual that the need of an officer is greater at another location than at the one requested.

The meticulous breakdown of accident report information done by the Traffic Engineer's staff, furnishes our Police with the ammunition needed in our selective enforcement program so that we can make sure we are assigning our officers to the proper locations at the times when most accidents are occurring and furthermore, that they are familiar with the particular type of violation causing the most accidents. Another relationship at work behind the scenes is the careful thought and planning that takes place before a big event is scheduled in the Park system, especially at Soldier Field. Many weeks before the big day, conferences are held not only with Traffic representatives and Police, but with sponsors of the event, Transportation Company representatives and all interested or affected parties. Careful planning and smooth cooperation has established a nation-wide reputation for the Chicago Park District in the handling of huge throngs, and it has also established the record of emptying Soldier Field of a crowd of 85,000 in 45 minutes.

One of the most recent examples of the relationship existing between Park Police and the Traffic Engineer is the disabled vehicle survey now being conducted. Many drivers have experienced delays and tie-ups on the Boulevards and Drives of the Park system, especially Lake Shore Drive during the rush periods. And have been annoyed to learn the cause of the delay to be a motorist out of gas or a minor accident in which two vehicles have hooked bumpers in the middle of the street. At the present time we are trying to get all the information we can on the cause and extent of these delays. Each officer patroling the Drive during the rush hours is required to fill out a disabled vehicle card when he comes upon such a vehicle. He notes the time, location, nature of the trouble, the time necessary to repair it, and the extent of interference with other traffic. As soon as we get enough samples covering all types of weather conditions, an extensive analysis of these reports will be made by the Traffic Engineer. We hope it will result in the taking of steps to reduce to an absolute minimum, the delay caused by disabled vehicles. Right now we do not know what the answer will be. It may be a creation of a tow truck patrol or the equipping of Police cars with "No-Jack Dollies," more emergency bays, or perhaps something we haven't thought of yet. It is a tough problem, but we are sure we can lick it together—the Traffic Engineer and the Police.

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The Effect of Pedestrian Signals on Vehicular Traffic

By Rafael Cal y Mayor
Assistant to Director General, Mexican Highway Association

THE report of the committee on "Warrants for Pedestrian Walk-Signals" presented at the Twentieth Annual Meeting of the Highway Research Board in December 1940[1] emphasized the following facts: In American cities, one-half to three-quarters of traffic deaths happened to pedestrians. Ten to fifteen per cent of the urban pedestrian problem is said to be centered at signalized intersections. Methods of preventing pedestrian mishaps have received greater thought as pedestrian accidents have been accorded greater concern. One of the results of this development has been a greater interest in pedestrian control by traffic signals, especially signals designed exclusively for the control and protection of the pedestrian.

In an inquiry made by the Committee in 18 cities, of which twelve used special pedestrian signals, some interesting results were obtained. Of the 18 cities questioned, 7 reported that pedestrian obedience to signals was improved by the use of a special "walk" signals. (See Fig. 1). One of the cities submitting data reported that prior to the use of special signals, 60.6% of pedestrians observed entered the intersection on the green signal. After the installation of special signals the proportion grew to 71.9%. Six of the cities reported that pedestrian accidents were reduced by the use of the special signal.

One of the most important conclusions of the committee was the inadequacy of data on the effect of special pedestrian signals on traffic behavior. All sources surveyed agreed, on a general basis, that special pedestrian signals were an aid to pedestrian safety.

The traffic authorities of the City of New Haven, Connecticut, recently installed a new type of pedestrian signal on some of the busiest intersections of its business district. The signals installed are of the neon tube type and arranged so as to provide a special interval of time or phase, for pedestrian crossings without interference with vehicles. That is, traffic flow is separated from pedestrian movement. Thus a new attempt was being made towards a better safeguarding of pedestrians and a better efficiency in vehicular traffic operation; while there was a good opportunity to measure the effects of this signal on traffic.

Problem

The problem mainly consisted in measuring the performance of vehicles at those intersections, first when there were no pedestrian signals except the regular traffic signals as a before "study;" and second, four months after the new pedestrian signals were installed.

As additional information for the reader, the pedestrians originally crossed with the green traffic light in the before "study," but were provided with a special crossing phase, as already mentioned, in the after "study" without interference of turning vehicles. In the same manner, turning vehicles were supposed to move without interference from pedestrians. At intersections including one-way streets pedestrians crossed with the green light where there were no turning movements by vehicles, so that the walk period was correspondingly increased.

Fig. 1

Previous experience with this type of light in other cities had indicated a general acceptance and good performance, but little technical study was made of the results. Vehicles seemed to have a more free flow on turns because of the absence of pedestrians, less hazards for the latter were obvious and, in all cases, conflicts between vehicles and pedestrians were less apparent. The hypothesis sustained was that the delays of vehicles should decrease with a decrease of pedestrian interference and in general the traffic flow made more efficient, while pedestrian safety was increased.

This traffic study was made by observations at three of the busiest intersections in downtown New Haven, which were provided with the new pedestrian signals. The method used in the collection of data was the motion picture method

[1]Sorensen, Leslie J. *"Report of Committee on Warrants for Pedestrian Walk Signals,"* Proceedings, Twentieth Annual Meeting of the Highway Research Board, Dec. 1940 pp. 694-701.

Mr. Cal y Mayor was a student at the Yale Bureau of Highway Traffic during the academic year 1949-50, and this article is based on his student thesis.

developed by Professor Bruce D. Greenshields[2] that consists of a series of pictures of the intersections studied, from an elevated position.

The intersections of Chapel Street, with Temple, Orange, and State Streets, the most congested of the business area, were chosen.

The "before" studies were taken November 8, 1949 between 3:00 and 4:00 P.M. under clear, slightly cold weather. The "after" studies were taken March 10 and 14, 1950 also between 3:00 and 4:00 P.M. under clear and cold weather. All these days chosen for the studies were typical week-days and nothing was observed to indicate conditions not common.

The analysis of the field data was done through the projection of the films, of which about 200 ft. of film for every intersection were taken, on a table and "running" them at slow speed or even frame by frame.

The pictures were taken at a speed of 88 frames per minute, due to the special timing device, therefore the movement of traffic could be timed when the film was projected. Thus, the cumulative delays, headways, time to complete turns, etc., were timed by the number of frames. Each frame has a number registered by the automatic counter, enabling the analyzer to calculate intervals of time by relating the numbers that appear on each frame. Later, the number of frames was converted to seconds.

In this manner, volume counts were taken, direct observations were made of the observance of motorists to traffic signals and the interference of vehicular motion by pedestrians, spacings between cars were recorded, turning movements were timed, etc. Volume counts were recorded with detail of types of vehicles as to passenger or heavy vehicles. Light commercial vehicles were considered to perform as passenger cars.

Volume Counts

In order to have a desired relation between the studies made and the traffic volumes at the intersections, samples of 30 and 45 minutes were taken of the volumes and expanded to hourly volumes. As additional information to get an idea of the pedestrian volumes at the intersections, the volumes recorded on one single crosswalk range from 900 to 2300 pedestrians per hour.

Observance

By direct observation of the film, counts were made of observance of all vehicles to traffic signals. Four distinctions were made: Vehicles entering the intersection legally on green period *without* any interference from pedestrians; vehicles entering on green but *being interfered* by pedestrians still using the crosswalks; vehicles entering on red (including amber) *without* pedestrian interference; and finally; vehicles entering on red *with* pedestrian interference. By interference is meant that the entering vehicle was actually delayed one or more frames (0.7 sec.) by pedestrian movements.

Average Time to Complete Turns

Wherever the film permitted, the right and left turns were timed at each intersection. The turns considered included the vehicles clearing through both crosswalks. Wherever the crosswalks were not visible, the corresponding lines were drawn on the white paper used as projection screen. A count was taken in order to obtain the amount of turns that were interfered by pedestrians, in relation to the total number of turns. No distinctions were made of types of vehicles nor in variations of the paths of the turning vehicles, although the turns considered used only the right lane for right turns, and left lane for left turns.

Headway Values and Cumulative Time Spacings

Headways between cars entering the intersection were timed in number of frames. The vehicles considered started from a stopped position in a platoon waiting for the change to green light. The first vehicle was timed from the time the green went on, to the moment he started motion. The second car was timed from the time the first one moved to the moment the front of the second car crossed the first line of the crosswalk. The following cars were timed from the crossing of the preceding car, to their own crossing; giving finally the time spacing between cars.

The cumulative time spacings for the vehicles was easily computed by adding the headways. For comparative purposes again, an overall average value was obtained from the headway values in each direction at all intersections, regardless of position of vehicles in the platoon.

Summary of Results

The first impression received by the motorists after the installation of the pedestrian signals in New Haven, was, as expressed by some of them: "causing more stops and

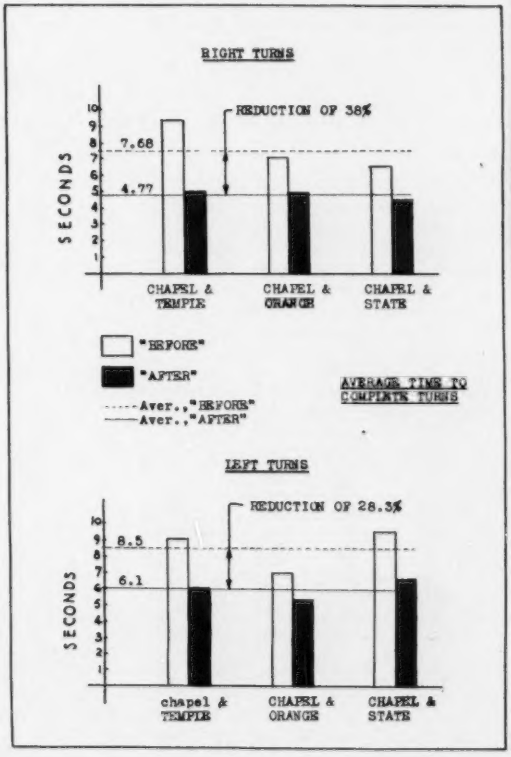


Fig. 2

[2]Greenshields, Bruce D., Shapiro, Donald, and Erickson, Elroy L. *"Traffic Performance at Urban Intersections,"* Technical Report No. 1, Bureau of Highway Traffic, Yale University, 1947.

longer delays." This, in part, was true because of the increase of the cycle length; true in the sense that the vehicle must wait longer at the intersection, but inexact in the sense that they were forced to make more stops because of the pedestrian signal. The latter depends on the conditions under which the system works, in terms of coordination, and is not connected to the pedestrian signal.

The data collected at one of the intersections, Chapel and Orange, is summarized in Table I.

The number of vehicles per cycle increased because the green period per cycle was increased (see Table I). In almost all cases the average headway values were reduced; 9.2% along Chapel Street, 9.3% along the perpendicular streets.

The biggest change that was observed, as far as movement is concerned, was on the necessary time for vehicles to complete turns. Time for right turns, especially, decreased considerably as seen in Table I, and Fig. 2, showing the decrease in bar-graph form, where an average reduction of 38% was observed. Left turning movements were observed to require an average of 28.3% less time than in the "before" study.

A considerable reduction was observed in the interference of pedestrians with vehicles entering the intersection. The highest reduction was obtained at Temple and Chapel, where in the "before" study 21% of vehicles entering the intersection were interfered by pedestrians. In the "after" study this percentage dropped to 1.3. Smaller reductions were obtained at the other two intersections.

The observance to traffic signals remained unchanged, as the slight changes observed may be disregarded.

After careful examination of the facts, an attempt was made to draw the most significant conclusions of the effect of the pedestrian signals installed, on vehicular traffic. Their installation here implies the introduction of that extra period of the cycle dedicated to pedestrian movements.

First Conclusion: The installation of special pedestrian signals for the purpose of separating the movements of vehicular traffic from pedestrian traffic helps expedite the movement of vehicles. It reduces the intersectional delay, caused by the traffic signal, by reducing the average headway value between vehicles; in this special case by an approximate amount of 9%. The Cumulative Time-Spacing Curve was lowered in the "after" studies of two of the three intersections (see Fig. 3).

Second Conclusion: The more efficient flow is due mainly to the separation of pedestrian from vehicular movements. This separation produces an extraordinary decrease of conflicts between these two elements. Less conflicts produce the reduction of time for vehicles to make turning movements, which was proven through experience to be the main factor in intersectional delays. This, in turn, reduces the headway values as stated in the first conclusion. Averaging the three intersections we see that where in the "before" study 45.5% of the movements, including turns, were interfered by pedes-

TABLE I
ORANGE AND CHAPEL
SUMMARY SHEET

FACTOR STUDIED:	"BEFORE" Dec. 1, 1949 3-4 P.M.	No. of Obs.	"AFTER" Mar. 14 1950 3-3:30 P.M.	No. of Obs.
Total Cycle Length of Traffic Signal	50 sec.	—	80 sec.	—
Signal Split (Chapel-Orange-Ped. Period)	22.5-27.5-0	—	30-30-20	—
Total Green period per hour: Chapel	24 min.	—	20.5 min.	—
Total Green period per hour: Orange	29 min.	—	20.5 min.	—
Average No. of Vehicles Per Cycle	16.5	—	21	—
Average Total Hourly Volume Entering from Orange (one-way street)	377 v/hr.	45 min.	360 v/hr.	30 min.
Percent of Buses and Trucks	8.8%	45 min.	5.0%	30 min.
Percent of Right Turns	13.0%	45 min.	12.2%	30 min.
Percent of Left Turns	13.5%	45 min.	8.3%	30 min.
Average Total Hourly Volume Entering from Chapel (two-way street)	813 v/hr.	45 min.	586 v/hr.	30 min.
Percent of Buses and Trucks	17.0%	45 min.	20.5%	30 min.
Percent of Right Turns	7.0%	45 min.	13.3%	30 min.
Percent of Left Turns	5.4%	45 min.	6.8%	30 min.
Vehicles Entering on Green Light Without Ped. Interference	91.6%	348	94.8%	209
On Green with Ped. Interference	5.5%	348	1.4%	209
On Red without Ped. Interference	2.9%	348	3.8%	209
On Red with Ped. Interference	0%	348	0%	209
Average Time to complete Right Turn (Chapel to Orange)	7.4 sec.	36	4.6 sec.	53
Average Time to complete Right Turn (Orange to Chapel)	6.9 sec.	33	5.1 sec.	36
Average Time to complete Left Turn (Orange to Chapel)	7.0 sec.	29	5.4 sec.	22
Average Percent of Total Turns Interfered by Pedestrians	40.4%	173	4%	130
Average Headway Value Along Chapel	4.3 sec.	163	3.4 sec.	138
Average Headway Value Along Orange	3.8 sec.	195	3.4 sec.	182

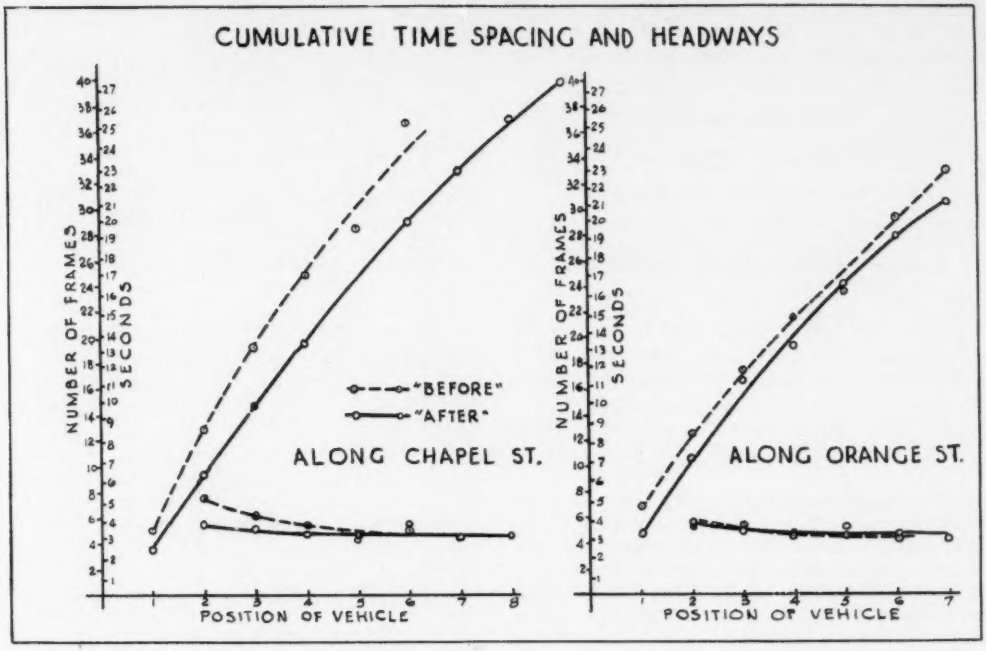


Fig. 3

trians; in the "after" study, only 3.1% were interfered.

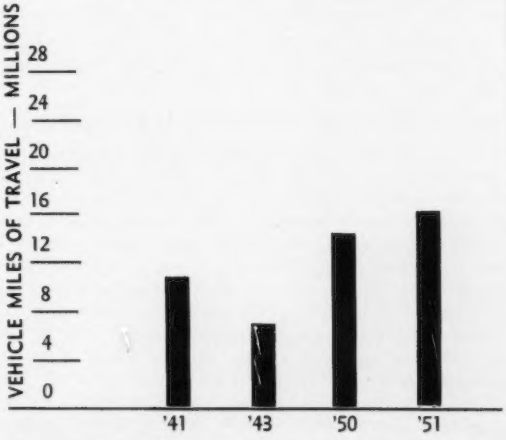
Third Conclusion: As a result of the elimination of conflicts, the average time to complete the turning movements at the intersection was, in all cases, reduced notably. Time for right turning movements was reduced an amount of 38%. Left turns required 28.3% less time in the "after" study. These last two figures are an average for the three intersections.

Fourth Conclusion: The capacity of the intersection is affected by the change of cycle length and decrease in headway values. In this case, the "green period time" per hour was reduced from 53 min. per hour, for both intersecting streets, to 41 min. per hour. This reduced the capacity of the intersection on a basis of constant headway value.

The reduction observed in headway values tends to increase the capacity of the intersection but, in this case, it cannot counteract the effect of the lengthening of the cycle with the consequent reduction of cycles per hour. Therefore, as the total cycle length was increased without allowance for an increase of the total "green period" per hour, the capacity of the intersection was decreased.

Fifth Conclusion: Last, but not least in importance, it should be noted that through Conclusions 2 and 3 we should point out, even though it is a matter not directly related with this study, that the hazards to pedestrians were greatly reduced. There is a direct relation between the reduction of hazards and the observed reduction of conflicts between vehicles and pedestrians. This can only be confirmed by an ample study of the accident record of those intersections.

Traffic Trends



TRAVEL ON RURAL ROADS FOR FIRST MONTH OF 1941, 1943, 1950 and 1951.

Based on Bureau of Public Roads Data

Report on Assignment 4
Committee #9—Highways
American Railway Engineering Association

Location of Highways Parallel with Railways

W. C. Pinschmidt (chairman, subcommittee), H. D. Blake, P. W. Elmore, J. S. Findley, L. W. Green, W. J. Hedley, W. H. Huffman, G. P. Palmer, Walker Paul, R. J. Pierce, P. T. Simmons, C. V. Talley, J. W. Wheeler.

MANY instances have occurred in the past where new highways have been built parallel and close to existing lines of railroad, followed later by the construction of spur or connecting tracks crossing the highways at grade, in order to serve industrial plants subsequently established beyond the highways. In other instances, in residential sections, after streets or highways have been built parallel and close to existing railroad tracks, it has been considered necessary to cut streets through an area and across the main running tracks at grade, in order to serve the area more adequately. Many such cases have not only increased the number of grade crossings, but have increased the accident hazard potential to an extent undreamed of by the original planners.

A study of some of these cases has brought forth ideas and principles, the adherence to which should have the effect of holding to an absolute minimum the construction of highways parallel and close to railroad tracks.

The principles set forth in this report are offered for the guidance of railroads, industries, public authorities and developers of property, in cooperative planning for the future.

Industrial or Manufacturing Areas in or Near Cities

It is desirable that public highways paralleling railroad main tracks in industrial or light manufacturing areas be located not less than 500 ft., and preferably 800 ft., from the normal right-of-way line of the railroad. Such location will enable industries served by the railroad to utilize a full 500 to 800 ft. depth of property adjacent to the railroad, will permit the installation of ample track connections and facilities to serve the industrial plants, and will eliminate the necessity for highway-railway grade crossings that would otherwise be required on the industrial tracks or their connections.

In a heavy industrial development where large areas of land are required for the location of manufacturing plants, a minimum distance of 2000 ft. between railroad tracks and parallel highways is desirable.

The number of public highways crossing railroad main tracks, either over, under, or at grade within a given industrial area should be kept to a minimum. To minimize the interference with track connections serving industrial plants, it is generally desirable that any such crossings of highways and main tracks be located not closer than one-half mile apart, measured along the tracks.

Where parallel highways intersect highways that cross the tracks, there should be sufficient distance to permit appropriate roadway connections to enable highway traffic in all directions to move expeditiously with safety.

Where through highways, limited access freeways, and full freeways or parkways are planned to be constructed parallel to railroad main tracks in other than urban residential areas, it is desirable that they be located at least 1000 ft. from the railroad main tracks.

Urban Residential or Retail Commercial Areas

It is desirable that streets paralleling railroad main tracks in urban residential or retail commercial areas be located at least 200 ft. from the normal right-of-way of the railroad.

It is desirable that highway crossings, whether over, under or at grade of main tracks, be located not closer than one-half mile apart, measured along the tracks.

Where a community has been built up close to a railroad, and there are numerous street crossings of main tracks, together with parallel streets existing close to the tracks, these parallel streets can be effectively used in some instances to serve as outlets for the intersecting streets, thus enabling the abandonment of some of the intermediate crossings.

At locations where parallel streets intersect cross streets near grade crossings of main tracks, suitable highway traffic control protection should be provided to protect the traffic moving from the parallel streets, intending to cross the main tracks, in the event of a train movement. Likewise, adequate protection should be provided to take care of traffic crossing the main tracks to enter the parallel streets. If automatic gates and flashing-light signals are used at these crossings, they should be so interconnected with the highway traffic control devices as to prevent the trapping of highway vehicles on the tracks.

Rural Areas

Even though there appears to be no immediate prospects in sight for the establishment of either light or heavy manufacturing plants along a given line of railroad in a rural area, before planning to construct a new highway parallel to the railroad, consideration should be given to the factors that would influence the selection of a site or sites for location of such manufacturing or industrial plants. As a matter of precaution, unless the geographical features appear to preclude the possibility of locating industrial plants along the railroad, sufficient space should ordinarily be reserved to permit such location of plans adjacent to the railroad without interference from a new highway. Therefore, in rural areas it is generally desirable to build new highways parallel to existing railroads not closer than 1000 ft. to the railroad.

General

In planning for the location of streets, through highways, limited access freeways, and full freeways or parkways, either in new areas or in areas where property is approaching a transition stage—such as from retail commercial to either light or heavy industrial—care should be taken to avoid locating any of these types of highways immediately adjacent to railroad right-of-way or station grounds.

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Colored Route Markers to Help Motorists in Hub

New colored route markers—some already in place on the Jamaicaway and Fellsway—are a state Department of Public Works experiment to help autoists through Boston and congested intersections, a spokesman for the department said.

Edgar F. Copell (Mem., ITE), engineer in charge of traffic for the department, said the contrasting colored markers will be erected in urban areas and other points of congestion if they are successful.

"Recognition of the colors signifying the routes desired," he said, "will be a great time saver for the motorist and help speed up traffic conditions in and out of Boston."

ICC Proposes New Truck Safety Regulations

The Interstate Commerce Commission has released a new draft of proposed revisions of its motor carrier safety regulations. Some of the proposed safety regulations include: (1) Annual physical examination of drivers; (2) every bus, truck and truck tractor equipped with air or vacuum brakes must have a reservoir of sufficient capacity to insure a brake application sufficient to stop the vehicle within performance requirements; (3) all vehicles must have two windshield wipers instead of one and vacuum wipers must be so constructed that their operation will not be adversely affected by change in the intake manifold pressure; (4) every bus, truck, trailer and semi-trailer must be equipped with flaps on the rear wheels to prevent throwing dirt, water or other materials on the windshields of following vehicles; (5) all motor vehicles except truck tractors must be equipped with rear bumpers not more than 30 inches from the ground when the vehicle is empty. Such bumpers must not be located over 24 inches forward of the extreme rear of the vehicle.

Salvaging Old Pavements By Resurfacing

In rehabilitating old pavements, the maintenance division of the Minnesota Highway Department has found that surfaces placed on gravel lifts over badly broken, cracked, distorted or disintegrating pavements, or pavements showing pumping tendencies, retain their smoothness better and show less cracking than surfaces placed directly on concrete. The gravel lift, or base course, is about 5-inch minimum thickness. In some cases, the upper two inches of the lift has been stabilized with bituminous material before placement of a single course of 1½-inch wearing surface. In other cases the lift has been primed and covered with two courses each of about 1½-inch thickness.

Several methods have been used by the maintenance division in widening pavements. The widening has been placed on both sides or on one side, depending largely upon physical control features. In the absence of any such limitations, experience to date favors widening on one side.

TRAFFIC NEWS

Yale Announces Fellowships

Yale University's Bureau of Highway Traffic is now accepting applications for eleven graduate fellowships for the study of traffic engineering during the academic year 1951-52.

Announcement of the availability of the fellowships and the course of study for the coming year was made recently by Theodore M. Matson, Director of the Yale Highway Traffic Bureau.

The Bureau, established at Yale in 1938, is a center of graduate training and fundamental research in highway matters. Each year it trains between 20 and 35 men for professional careers in highway operations and traffic engineering.

Nine of the eleven graduate fellowships, Mr. Matson pointed out, are made available through a grant from the Automotive Safety Foundation. Another is sponsored by the American Transit Association. The other award is the Rand McNally Fellowship in Traffic Engineering, offered for the first time since its creation last year by the Rand McNally Company of Chicago, Ill.

Each of the eleven fellowships provides approximately $1,400 to cover living expenses and tuition for one year, as well as a stipend for individual research projects.

The awards are open to men who have been granted a degree in some branch of engineering from an accredited college.

The curriculum for the coming year includes the following courses: Highway Traffic Characteristics, Highway Traffic Regulations, Traffic Design, Traffic Planning, Traffic Administration and Practical Traffic Problems. In addition, each student is required to develop a report based on research, which indicates his capacity for advanced work and represents an original contribution of values in highway traffic.

Special forms for the Fellowship applications and additional information may be obtained by writing to the Director, Bureau of Highway Traffic, Strathcona Hall, Yale University, New Haven 11, Conn. The closing date for applications is June 1, 1951.

Montgomery County Named Top U. S. Community

Montgomery County has been picked as one of eleven outstanding American communities for 1950. This honor was awarded recently by the National Municipal League, which annually selects a "team" of All-American communities based on outstanding achievements in providing good government.

The selection of Montgomery County stemmed from its successful council-manager form of government which was established in 1948 after a ten-year struggle by many civic groups and the League of Women Voters to install a home-rule charter. Under this new form of government, Montgomery County has embarked upon a program of development which thus far has resulted in a five-year building program, the raising of teachers' salaries, the establishment of citizens' advisory committees to many of the County's departments, and the provision of large amounts of off-street parking. Other features of this development are a large school building program, new roads, and the extension of planning and zoning. Mason Butcher (Mem., ITE) is Traffic Engineer of Montgomery County.

This high award is the second to be bestowed on Montgomery County recently. Last year it received the 1949 Achievement Award from the Municipal Finance Officers Association for outstanding improvements in the field of fiscal management, organization, and public and financial reporting. (NEWS LETTER, July 1950).

Position Available

TRAFFIC ENGINEER

Amarillo, Texas, Under City Manager, Municipal Civil Service. Starting salary $4,800 to $5,000. Obtain application blanks from Clifford L. Davis, Personnel Director, Personnel Department, Amarillo, Texas.

Traffic Engineering in England

The following excerpt originated in the British Parliament and appeared in the Parliamentary Notes' Section of the "British Road Federation" bulletin.

Mr. Watkinson asked Mr. Alfred Barnes, Minister of Transport, if he was aware of the valuable work done by the Institute of Traffic Officers in the United States; and whether he would consider the establishment of such an institute in this country. Mr. Barnes replied that he was aware of the work of the Institute of Traffic Engineers in the United States and said that in this country existing professional institutions include in their activities work of the same kind. It would be for the interested members of the engineering profession to decide whether they wished to establish an institution to deal especially with traffic engineering matters. In a supplementary question, Mr. Watkinson asked if this were decided would the Ministry of Transport view it with sympathy. In reply, Mr. Barnes said professional organizations or institutes which studied traffic matters were always encouraged. As he had indicated, this was primarily for the profession themselves to decide.

British Road Federation
December 1950

3,717 Miles of of State Highways 'Lost' Through Diversion in 1949

More than 3,717 miles of roads on the state highway systems of the nation were "lost" in 1949 because the states diverted $166,111,000 in highway use tax revenues to non-highway purposes, it is estimated by the National Highway Users Conference.

This penalty for non-highway application of highway revenues becomes even more punitive to the highway user when consideration is given to the fact that, since 1934, *a total of 108,508 miles of road could have been built with the monies diverted at the state level of government alone.*

The "lost" mileage was computed by dividing the total amount of monies diverted in each state by the average highway construction cost per mile within each state for each year.

The 3,717 "lost" miles in 1949 represents a decrease of some 366 miles from the 1948 figure of 4,083. This decrease was brought about as a result of a reduction of more than $23 million in the total amount of highway user income diverted to non-highway purposes by the states.

The number of miles of road which could have been built with diverted funds, however, fully indicates the degree of loss to highway users and to the states as a whole.

Fifth Annual Florida Highway Conference

At a recent meeting of the steering committee May 14 and 15, 1951, were selected as the dates for the fifth annual Florida Highway Conference which will be held in Gainesville under the sponsorship of the Department of Civil Engineering, as a public service function of the Engineering and Industrial Experiment Station at the University of Florida.

Discussions at the 1951 Conference will be centered around the effect of the national emergency upon the highway program, with many other topics of general and specific interest slated for presentation. Subjects scheduled for discussion include the planning, design and construction of highway improvements in smaller urban areas, the structural design of flexible pavements, compaction of soils, highway research at the University of Florida, the effect of heavy loads on highways, and others of general interest.

The principal objective of this meeting, as it has been in previous years, is the promotion of closer relationships among all the groups concerned with highway and street problems in the state of Florida.

Some 300 persons are expected to attend this year's meeting, including representatives of all the major groups in the highway field in the state.

Additional information concerning the 1951 Conference may be received from L. J. Ritter, Associate Professor of Civil Engineering, University of Florida, Gainesville.

Parkway Progress Advanced by New U. S. Grant

A recent grant of $1,500,000 by the Bureau of the Budget for the Washington-Baltimore Parkway will make possible a speeding up of the work on the Federal section of the project. This sum added to money already available brings the total to $4,500,000, which has been approved for work on the road for the rest of the fiscal year. Federal officials in charge of the project will be able to proceed on the letting of contracts and work can be started in the Spring.

Another milestone in the completion of the parkway occurred recently, when the first section of the Baltimore-Washington expressway was officially opened. The new section of the road extends for a distance of six miles from the city line to Friendship International Airport. Sections of the road located in Baltimore City are now under construction.

In spite of the tremendous strides that have been made on this important project, there are still problems that must be met. There is a Congressional limit of $13,000,000 on federal expenditures and it is felt that the cost of the 18-mile stretch from Jessup, Maryland, to the District line may exceed that figure. The cost of the ten-mile State-financed section of the highway approximates $14,000,000. Then too, additional legislation will be required for an access highway inside the District of Columbia.

In-Service Training Program Features Defense

Fourteen members of the Traffic and Transportation Department of De Leuw, Cather & Company, Consulting Engineers, Chicago, are taking part in a training-in-service program. One-hour lectures are given once a week by Wm. R. McConochie (Mem., ITE), who gave a similar course at Northwestern University during 1942-44. In addition, weekly reading assignments require two to three hours of each participants' spare time.

One purpose of the course is to retrain a number of men in the fundamentals of transportation. De Leuw, Cather & Company anticipates a shift in emphasis on future traffic jobs from long-range planning to more immediate objectives. This change will be brought about, it is believed, by the defense program and its impact on the civilian economy.

Georgia Bill Based on Act V of Uniform Code

A bill to provide motor vehicle laws in conformity with Act V of the Uniform Code has been introduced in Georgia. The measure is the result of a comparison of existing motor vehicle laws with the Uniform Code and has the support of the Georgia Highway Users Conference.

The above photo shows C. J. Walker, Traffic Engineer of Gary, Indiana, with the car furnished him by the City. Walker believes that Traffic Engineers should be given prominence in the public eye. He states that it is surprising the amount of useful suggestions he picks up from the public while at work in the field when his car is properly identified.

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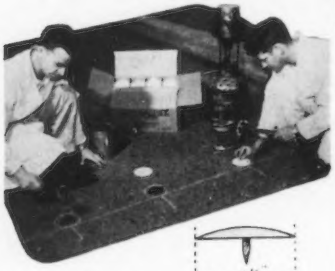

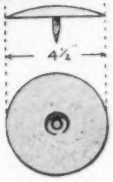

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LOOKING AHEAD

MAY 30-SEPTEMBER 9, 1951—ARCADIA, CALIFORNIA
World Transportation Fair, Santa Anita Park.

JUNE 3-8, 1951—FRENCH LICK, INDIANA
Society of Automotive Engineers. Summer Meeting.

JUNE 4-8, 1951—CHICAGO, ILLINOIS
Midwest Safety Conference. Congress Hotel. Contact: Joseph F. Stech, Manager, Greater Chicago Safety Council, Suite 805, 10 North Clark Street, Chicago 2, Illinois.

JUNE 21-23, 1951—SALT LAKE, UTAH
Western States Safety Conference. Contact: Clarence Williams, Executive Director, Utah Safety Council, State Capitol Building, Salt Lake City, Utah.

AUGUST 27-30, 1951—WASHINGTON, D. C.
Illuminating Engineering Society. National Technical Conference. Hotel Shoreham.

1952 ANNUAL MEETING—ITE
To be held in Chicago, Illinois. Tentative dates—September 8-11, 1952.

New Course for Driver Trainers

The Institute of Public Safety of The Pennsylvania State College is embarking on a new type of project in the motor fleet field.

The Institute has scheduled a two-week course for driver trainers. The course is for supervisors of drivers, senior drivers, driver trainers and others responsible for training drivers. A longer course to train commercial drivers is planned for later this year.

Topics will deal with training methods both in the classroom and in the vehicle. Demonstration lessons will be given.

Additional information can be obtained from Professor Amos E. Neyhart, Institute of Public Safety, The Pennsylvania State College, State College, Pennsylvania.

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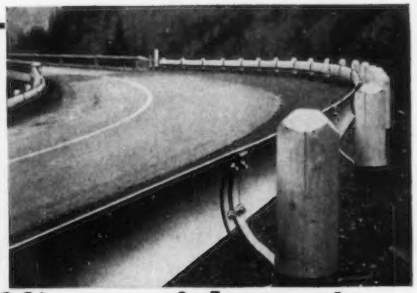

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Changes At National Headquarters

Harry E. Neal, President of the Institute of Traffic Engineers, recently announced that Robert S. Holmes, Executive Secretary, had been granted a one-year leave of absence to accept a responsible assignment in the national defense program. Mr. Neal stated that due to the urgency of the request from the Federal Government, Mr. Holmes had asked him to request immediate action of the Board of Direction in granting him a leave of absence. Mr. Holmes will assume general engineering and public works responsibilities, to include traffic engineering, with the Federal Civil Defense Administration.

President Neal stated that Holmes' appointment to this important post is an indirect compliment to the *Institute* and the traffic engineering profession. It is anticipated that he will maintain continuous liaison with the *Institute* and other official and non-official agencies in all matters dealing with state and municipal public works and traffic engineering as they relate to the civil defense program.

Mr. Holmes has been Executive Secretary of the Institute of Traffic Engineers since April 1, 1947. He is experienced in highway and traffic engineering and in related fields, including research, traffic education and public training work, police traffic control, and traffic engineering administration. After training at the Yale Bureau of Highway Traffic, he was assigned to the Special Highway Division, Pennsylvania Turnpike Commission and later joined the traffic engineering staff of the National Conservation Bureau. For sixty-two months in World War II, he was engaged in traffic engineering and control for the Army, and later served as Assistant War Department Safety Director, responsible for organization and administration of an Army motor vehicle safety program. He is a member of the Institute of Traffic Engineers, an associate member of the American Society of Civil Engineers and of the American Society of Safety Engineers. He is a member of the Department of Traffic and Operations of the Highway Research Board and editor of "Traffic Engineering" magazine, official publication of ITE.

President Neal stated that, with the approval of Yale University authorities, Fred W. Hurd was appointed by the Board to act as the Executive Secretary for a one-year period. By agreement with the University, Mr. Hurd will devote one-half of his time to the management of *Institute* affairs. He has indicated that he will also devote whatever additional time is necessary to assure continuity of *Institute* operations.

This arrangement is especially satisfactory in view of Mr. Hurd's former two-year tenure of office as Secretary-Treasurer of the *Institute*. He is thoroughly familiar with the administrative and management problems concurrent with the position of Executive Secretary. He is also well qualified to assume the responsibilities and duties of editor of "Traffic Engineering" magazine as he has served in the capacity of Associate Technical Editor for many years.

Mr. Hurd brings to the *Institute* many years of street and highway traffic engineering experience. For the past six years he has been responsible for graduate instruction in the principles of geometric design and the application of approved traffic control techniques at the Yale Bureau of Highway Traffic. He has been active in *Institute* affairs since 1940, shortly after completing one year of graduate study at the Yale Bureau. He has also been active on several committees of the Highway Research Board and is a Registered Professional Engineer in the State of Connecticut.

President Neal stated that Mr. Holmes has indicated to him that he will be available at any time, within limitations imposed by his new position, for consultation on matters pertaining to *Institute* affairs. He was in attendance at the Board Meeting in Kansas City, Missouri, April 6 and 7, and expects to be present at the Annual Meeting of the *Institute* in Los Angeles.

Legislatures Consider Severe Penalties on Overweight Trucks

Drastic and severe penalties for violations of size and weight limits are being considered by several state legislatures, a survey by the National Highway Users Conference reveals.

A Highway Interim Committee in Wisconsin will propose new penalties for truck weight violations "as tough as we know how to make them." The chairman proposes penalties graduating from 2c a pound for overweight of 1,000 to 2,000 pounds, up to 10c for overweight of 5,000 pounds or more. This committee also will propose reduction of legal axle weight limit from 19,000 to 18,000 pounds, with a tolerance of 1,000 pounds.

The Highway Study Committee in Ohio has recommended a reduction of axle weights from 19,000 to 18,000 pounds, as well as a reduction of gross weight from 78,000 pounds to 73,200 pounds.

The biennial report of the Wyoming Highway Department also recommends a schedule of fines that would take into consideration degrees of violation of size and weight limits.

Companion bills in Arizona would impose fines graduated from 2c for each pound in excess of the legal limit for the first 2,000 pounds, to 9c for each pound in excess of 4,000 pounds over the legal limit. Other bills permit officers, upon determining that weight is unlawful, to park a vehicle until the gross weight is reduced to the legal limit. Proposals similar to the latter two also are pending in the Maine and Texas legislatures. Indiana would increase penalties for weight violations to a maximum of 10c per pound of the excess weight if such excess is 5,000 pounds or more. This bill also authorizes impounding of the vehicle until the excess weight is removed and all fines paid.

Massachusetts would provide that the owner of any truck who causes it to be

loaded to excess weight limits shall be fined from $300 to $500 for each offense. Nevada would set up inspection stations on principal highways to check weights of trucks. Companion bills in Oklahoma would grant authority to Boards of County Commissioners to prescribe weight limits on county roads. New Hampshire and North Dakota also would increase penalties for overweight vehicles. Texas proposes a fine from $50 to $200, or 60 days imprisonment, for a second offense for overweight violation in excess of 2,000 pounds; a third offense would provide a fine of $100 to $500, or imprisonment for 6 months. Other Texas measures would reduce the gross weight limit from 48,000 to 38,000 pounds and suspend operating authority for violation of weight limits.

Fourth Annual Northwest Traffic Engineering Conference

The Fourth Annual Northwest Traffic Engineering Conference will be held in Moore Hall, University of Washington, Seattle, Thursday and Friday, May 17 and 18, 1951, under the joint sponsorship of the Western Section of the Institute of Traffic Engineers, the State of Washington Department of Highways and the University of Washington-Civil Engineering Department.

General Chairman for the Conference is Win Carsten, and Russ Bates is the Conference Secretary. Technical sessions and program are under the chairmanship of Herb Higgins of the State of Washington Department of Highways. Included under his committee are Dave Morris, City Engineer of Tacoma; Arch Bollong, City Traffic Engineer of Seattle; R. G. Hennes, Highway and Traffic Section, Civil Engineering Department, University of Washington; and Bill Stancer, County Engineer, Pierce County.

Parking Violations in St. Paul Cost Five Dollars

Five dollar traffic tags are helping St. Paul motorists to understand that they must not park during rush hours on designated arteries where peak hour parking is prohibited. After news of the increased fine had spread, G. H. Herrold (Mem., ITE), Director of City Planning, reports that morning and evening peak hour parking on the restricted streets is almost non-existent.

New Honorary Member

ERNEST P. GOODRICH, Consulting Engineer, formally accepted his election to Honorary membership in the *Institute* in March 1951, to become another internationally prominent individual in the history of the ITE to receive this outstanding recognition. Mr. Goodrich was the *Institute's* first president and his membership certificate

bears the number one.

Mr. Goodrich had a varied and comprehensive education, for he holds five degrees and a certificate; however, he states that his education is yet incomplete.

In 1910, he was appointed consultant engineer of the Department of Public Works of the Borough of Manhattan. He was almost immediately confronted with the task of widening roadway pavements to expedite traffic and, incidentally, of narrowing sidewalks and forcing the removal of many sidewalk encroachments. A corps of about fifty inspectors (politically appointed) were sent out to make pedestrian and vehicular traffic counts and to measure vehicle widths and lengths, and determine certain motorist parking habits. As a result of hundreds of such observations, says Mr. Goodrich, many new traffic regulations were formulated.

After some experience in traffic, the so-called "progressive system" of street traffic control was developed by Mr. Goodrich and shortly thereafter a two-wire system of electrical control from a central station was invented and patented.

In subsequent years traffic and parking surveys were made by Mr. Goodrich for about 50 municipalities in the United States, and traffic conditions were studied on the ground in most of the large cities around the world in the northern hemisphere. Professional services were furnished in London, Nanking, Bogota and elsewhere abroad, and in many cities in this country. He was consultant on street traffic for the Regional Plan of New York and Environs for several years around 1925.

Many professional lectures and papers have been given by him on all phases of the science of traffic engineering. He was a delegate to the first Hoover Conference on Street and Highway Safety.

He has been one of the *Institute's* staunch supporters and is a member of its policy committee.

He has been employed as an expert witness in a number of litigations including an appearance before the Interstate Commerce Commission. His prophecies as to the future of street traffic have been estimated as 99 44/100 per cent accurate (his estimate).

Not too much is known of his hobbies and extra-curricular activities, but one fact stands out as a possible clue. His story is that while on the train returning from an inspection trip by the American Society of Civil Engineers, one night, he held a royal straight flush which resulted in the financial collapse of holders of other good hands including one holding four aces. (We hear that 5-ace decks have now been outlawed by the A.S.C.E.) Mr. Goodrich reports that he hasn't played that kind of poker in many years.

SECTION NEWS

New York Metropolitan Section

The first afternoon luncheon meeting of the New York Metropolitan Section was held on March 19th at 12:30 P.M. This meeting was held at the Masonic Club in New York and many members and guests were in attendance.

Mr. Billings Wilson, Director of Operations for the Port of New York Authority, discussed "Transportation and Civil Defense." He was very well equipped to discuss this subject since he is a member of the Metropolitan Committee for Civil Defense and Chairman of the Special Committee for Emergency Interstate Traffic.

Personalities . . .

FRANKLIN M. KREML was born in Chicago, Ill., on January 11, 1907. He attended public schools there and then went on to the University of Wisconsin, Northwestern University and John Marshall Law School, Chicago, receiving his LL.B. degree in 1932 from the latter institution.

A veteran of 24 years in the police field, Frank rode a motorcycle for the Evanston, Ill., Police Department while attending Northwestern University. He worked his way through the ranks to lieutenant and director of the city's accident prevention bureau. He organized this bureau, the first of its type in the country. During this period he was granted a leave of absence to organize the Public Safety Institute at Purdue University. He later served as secretary to the Chicago City Council's Committee on Traffic and Public Safety.

Frank organized the Traffic Institute of Northwestern University and the Traffic Division of the International Association of Chiefs of Police in 1936 and has served as director of both since that time. He had been training traffic officials since 1933 when the Evanston Police Department in cooperation with Northwestern University conducted short training courses for traffic officials.

The two organizations headed by Frank have made outstanding contributions in the field of traffic control and accident prevention.

The Traffic Division of the IACP has assisted in traffic accident prevention activities in more than 70 cities, counties and states, virtually all of which have shown reductions in traffic deaths since this work was done.

Frank is chairman of the traffic and transportation conference of the National Safety Council and secretary of the Enforcement Committee of the President's Highway Safety Conference.

Frank entered the Army in July 1942 with the rank of captain in the Transportation Corps. He was with the Second Army Corps during the African invasion with the particular job of establishing land traffic operations at the important port of Oran. He set up the complex schedule of supply transportation from this port to all parts of Algeria. He later was assigned to Eisenhower's Allied Force Headquarters as chief of the Highway Division, Office of the Chief of Transportation, North African Theater of Operations.

During the Tunisian campaign, shortly after Rommel's break-through which destroyed the rail transport facilities, he was given the task of providing transport for the supply of the American forces in that area.

When plans were being formulated for the invasion of Italy, at Salerno, General Clark requested the services of Kreml in organizing the Transportation Section for his Fifth Army. This organization was accomplished within five months, after which time he was ordered withdrawn from the Fifth Army by Allied Force Headquarters and sent to the United States and England to aid in the planning for the D-Day invasion of France. He returned to Algiers upon request of his commanding officer, Gen. George C. Stewart, theater chief of transportation and, later, at the request of General Clark, was returned to the Fifth Army as chief of the Transportation Section, serving in that capacity throughout the long and bitter Italian campaign.

Frank returned to the U. S. from Italy in July 1945 en route to the Pacific war theater. While on recuperative leave, war with Japan ended. His last tour of duty was in Washington, D. C., as chief of the plans and logistics branch, Highway Division, Office of the Chief of Transportation. His awards include the Legion of Merit, the Order of the British Empire, the Italian Bronze Star, the Italian Cross of Military Valor, six campaign stars and an invasion arrowhead (for North Africa and Italy).

In the Army reserve, Frank holds the rank of colonel—commanding Headquarters and Headquarters Company, 425th Transportation Highway Transport Division.

CHARLES M. UPHAM, Consulting Engineer, received his Bachelor of Science degree in civil engineering, and later his Master's from Tufts College. He also holds a Civil Engineering degree from the University of North Carolina.

Highway endeavors attracted Mr.

Upham from his general engineering work with the Charles River Basin Commission and he was, sucessively, resident engineer and chief of party with the Massachusetts Highway Commission, testing engineer in charge of laboratory and materials of testing with the Coleman duPont Road in Delaware, and chief engineer of the duPont Bureau of Inspection. Mr. Upham was appointed chief engineer of the Coleman duPont Road in 1915 and organized engineering forces which drew specifications for the construction of this road, outlined methods of construction, designed and constructed the road and organized the maintenance of it. When the Delaware Highway Commission was created and the road was turned over to the state, Mr. Upham was retained as chief engineer of the Commission and organized its engineering department.

In 1921, Mr. Upham was appointed chief engineer of the North Carolina State Highway Commission and organized its engineering department. He was secretary of the American Association of State Highway Officials for three years and director of the Highway Research Board for four years; he was consulting engineer for the Federal Government of Mexico, reorganizing the Mexican Highway Commission in both its engineering and construction divisions; and was also consulting engineer for the Central Highway in Cuba and reported on work in Guatamala and Salvador.

Mr. Upham became Engineer-Director of the American Road Builders' Association in 1926, the objective of which is to acquire and disseminate scientific and technical information concerning highway construction, maintenance, operation and finance. In guiding this leading organization in its field, he has correlated the interests of the various segments of its membership, which embraces a cross-section of the entire highway industry and profession.

Author of upwards of a thousand articles and papers, Mr. Upham's news column "Down the Road," enjoys a circulation of more than 3,000,000 monthly; he is editor of the Annual Convention Proceedings of the American Road Builders' Association and won the 1946 Bartlett Award for outstanding achievement in highway work. In 1949, Sigma Tau, national honorary engineering fraternity, conferred on him its award for distinguished professional attainment. He is a licensed engineer in several states and has devoted considerable time to boards and committees interested in the highway industry and profession.

During the past few years Mr. Upham has acted as Consulting Engineer on several investigations connected with the highway industry and has worked on several committees in different organizations carrying on scientific and development work. He was formerly Consulting Engineer for the Maryland State Roads Commission, and, also for the Pennsylvania Turnpike Commission.

In 1938, President Roosevelt appointed Mr. Upham as a representative of the United States at the Eighth International Road Congress in the Hague, and he was appointed an official adviser to the United States Delegation to the Fourth Pan American Highway Congress held in Mexico City, Mexico.

Organizations with which Mr. Upham is affiliated include: American Society of Civil Engineers; Highway Research Board, National Research Council, L'Association Internationale Permanente des Congres de la Route; La Associacion de Ingenieros y Arquitoctos de Mexico; Washington Society of Engineers; Member Institute of Consulting Engineers; John Alden Society; National Society of Sons of the American Revolution; Washington Board of Trade; National Press Club; Cosmo Club; and Institute of Traffic Engineers.

Secretary's Column

Elsewhere in this issue you will find an announcement concerning your Executive Secretary's departure from the *Institute* for a one-year period. Accordingly, this column will constitute our last chat with you for some time to come. We have enjoyed reporting "topics of the day" to you and expounding our pet theories through this medium.

It is with sincere regret that I sever connections with the *Institute*, even on a temporary basis. The choice was difficult but seemed to be the best decision because of the current emergency. I sincerely hope that the international situation will become settled by this time next year, thus enabling all of us to return once again to normal.

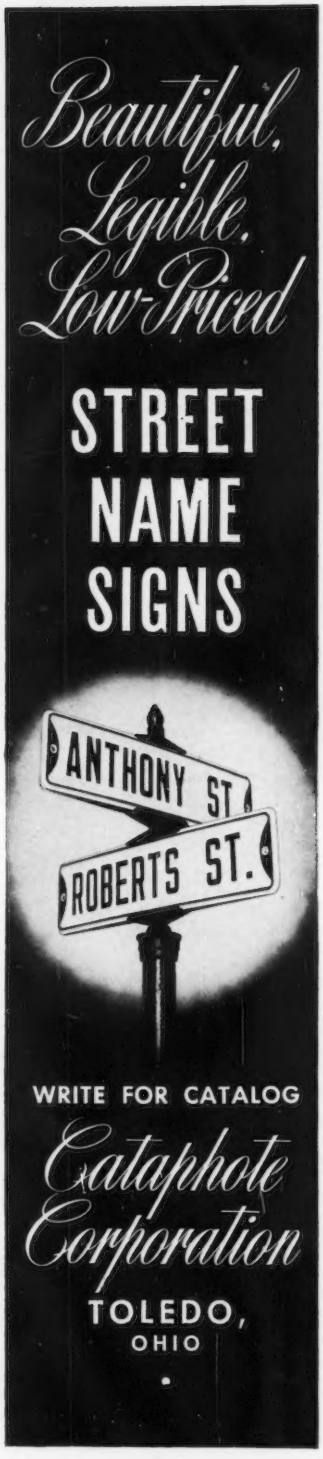
The new assignment I am undertaking in the Civil Defense Administration will provide ample opportunity to maintain close contact with the *Institute* and its individual members. It is anticipated that we will be in a position to request guidance and counsel from members, individually and collectively, in support of a strong civil defense program. We can therefore look forward to a continuing personal relationship with each of you and the same cooperation and support that you have so willingly given us in the past four years.

We consider it an extremely fortunate circumstance that will allow Fred Hurd to assume my duties and responsibilities for the interim period. This arrangement will bring an experienced person to the *Institute* who is already thoroughly familiar with operation of *Institute* affairs.

Your experienced staff of assistants will be of material assistance to Fred in the conduct and management of *Institute* affairs. Your continued loyal support will also lessen the initial burden imposed on him. We can breath a sigh of relief that change in my environment will have no appreciable affect on the organization.

Since the opportunity will not afford otherwise we herewith extend to each of you our heartfelt thanks and appreciation for your splendid support during the past four years. Certainly, the *Institute* could not have made such tremendous gains for the engineering profession without this spirit of teamwork on the part of everyone concerned.

Robert S. Holmes



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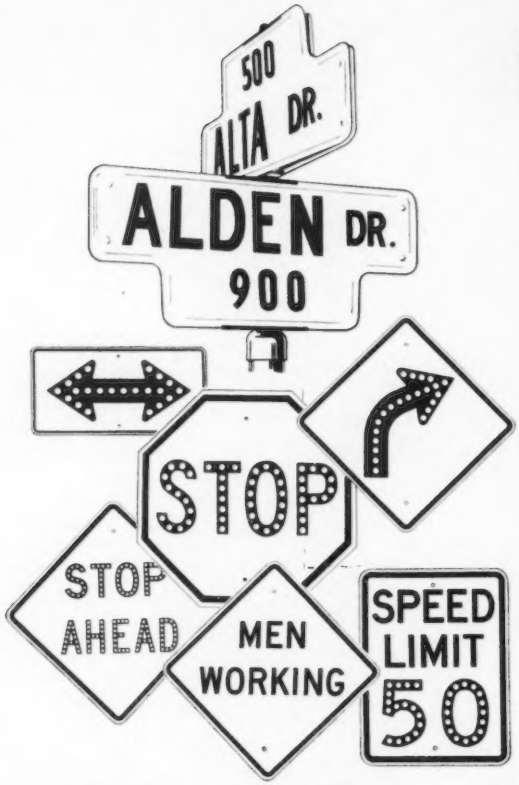

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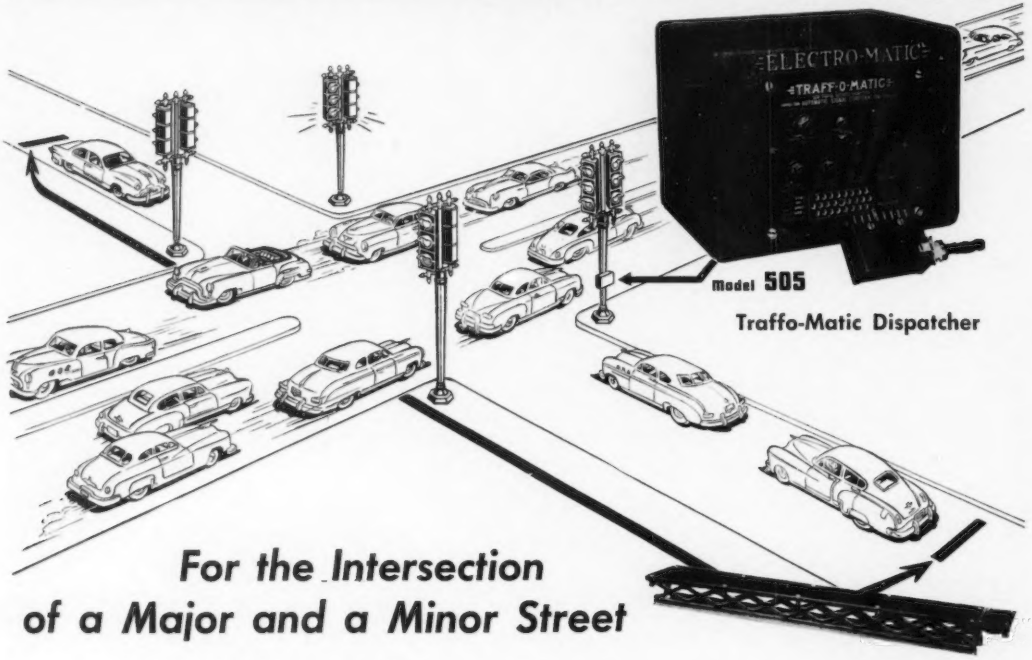

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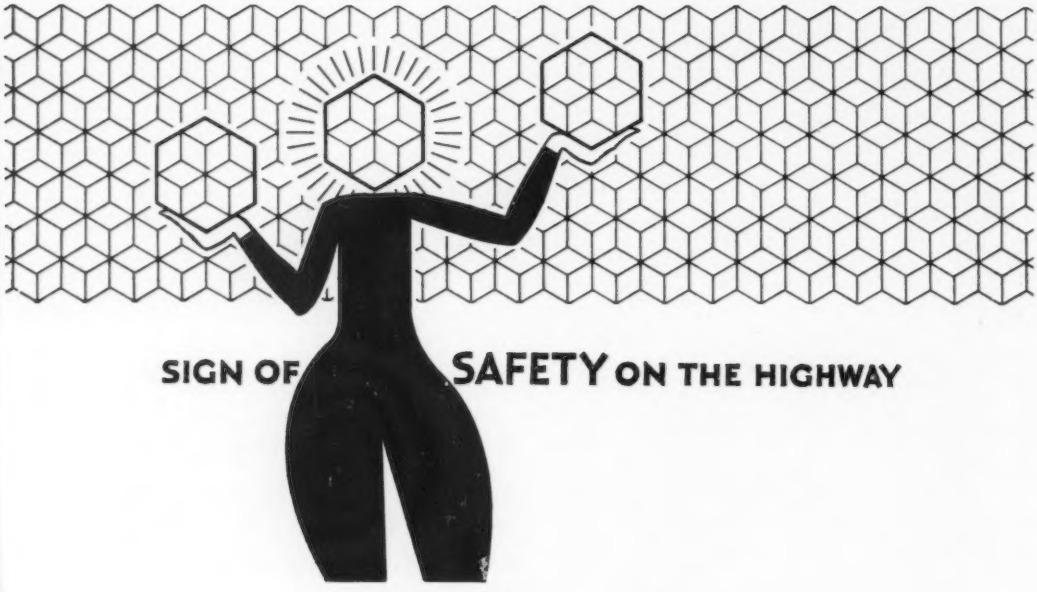

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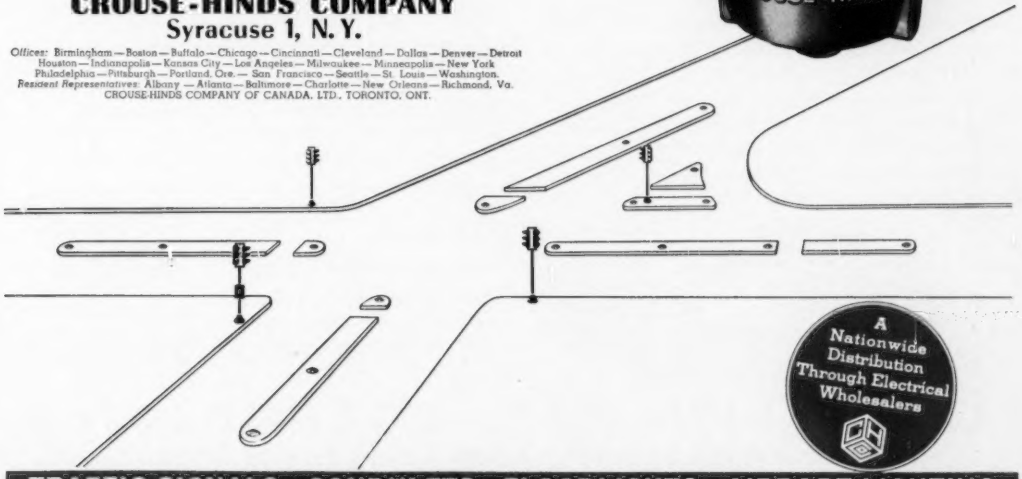

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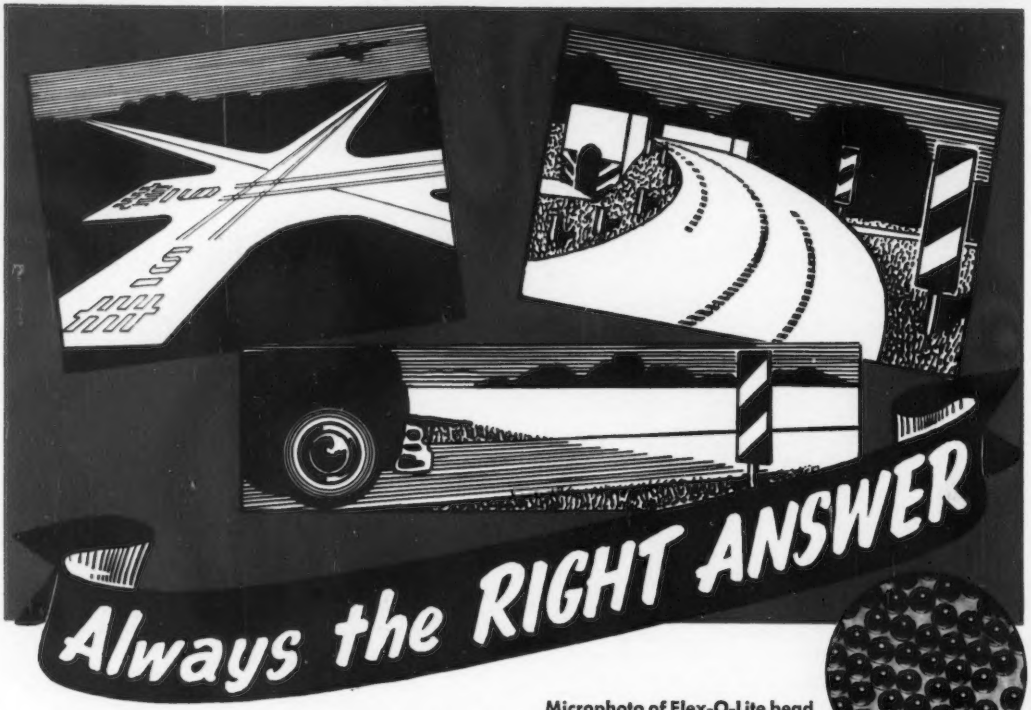

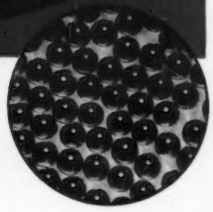

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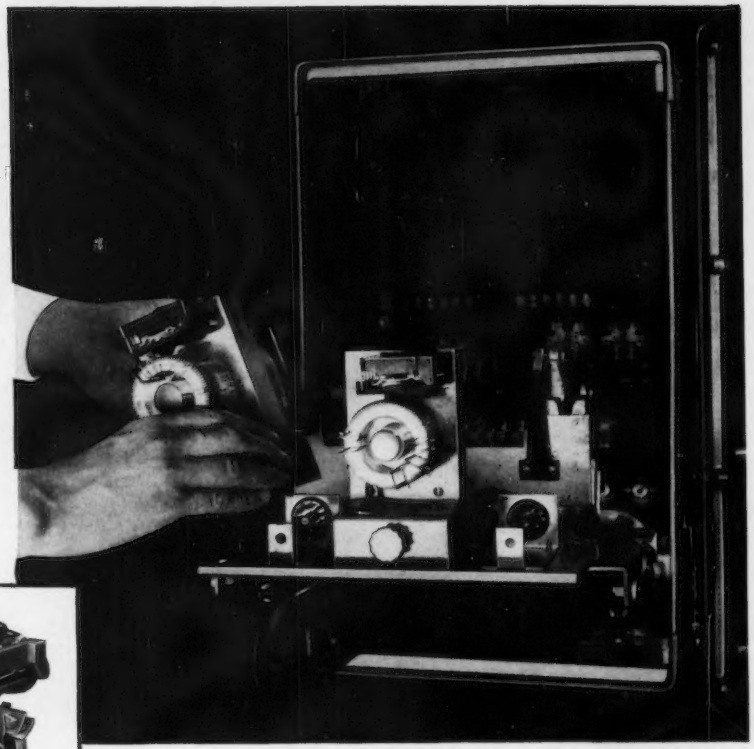

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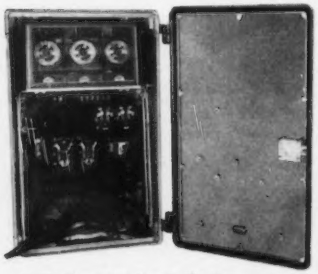

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